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**UNITED STATES DISTRICT COURT  
CENTRAL DISTRICT OF CALIFORNIA**

ENTROPIC COMMUNICATIONS,  
LLC,

Plaintiff,

v.

~~COMCAST CORPORATION; COMCAST  
CABLE COMMUNICATIONS, LLC; AND  
COMCAST CABLE COMMUNICATIONS  
MANAGEMENT, LLC;~~

DISH NETWORK CORPORATION, et  
al,

Defendants.

Case No.:

2:23-cv-~~1048~~-01043-JWH-KES

(Lead Case)

Case No.: 2:23-cv-01047-JWH-KES

(Related Case)

Case No.: 2:23-cv-01048-JWH-KES

(Related Case)

Case No.: 2:23-cv-05253-JWH-KES

(Related Case)

~~FIRST~~SECOND AMENDED  
COMPLAINT FOR PATENT  
INFRINGEMENT FOR CASE NO.  
2:23-cv-01048-JWH-KES



ENTROPIC COMMUNICATIONS, LLC,

Plaintiff,

v.

COX COMMUNICATIONS, INC., et al.,

Defendants.

ENTROPIC COMMUNICATIONS, LLC,

Plaintiff,

v.

COMCAST CORPORATION, et al.,

Defendants.

ENTROPIC COMMUNICATIONS, LLC,

Plaintiff,

v.

DIRECTV, LLC, et al.,

Defendants.



1 Plaintiff, Entropic Communications, LLC (“Entropic”), files this complaint for  
2 patent infringement against Comcast Corporation (“Comcast Corp.”); Comcast Cable  
3 Communications, LLC (“Comcast Communications”); and Comcast Cable  
4 Communications Management, LLC (“Comcast Management”), (collectively,  
5 “Comcast”) and in support thereof alleges as follows:

6 1. Around the turn of the millennium, cable and satellite providers were  
7 eager to deploy new and improved services, but they faced a big problem. The  
8 providers needed a high-speed data network inside buildings to deliver those services  
9 to various rooms. With existing technology, this meant installing new cabling inside  
10 each premises to carry the network. Aside from the costly materials themselves,  
11 technicians would be forced to spend hours planning the work, cutting and drilling into  
12 walls, and fishing cables throughout a building, all while doing so in ways customers  
13 might tolerate. The costs would run into the billions of dollars.

14 2. A group of inventors had a vision: what if they could repurpose the  
15 already-existing coaxial cables common in buildings to do the job? The challenges  
16 were daunting. Existing coaxial cabling was never intended to work this way. The  
17 mess of existing coax topologies in homes and businesses was a formidable barrier.  
18 The splitter devices used to distribute legacy TV obstructed signals from  
19 room-to-room. Making it all work would require nothing less than the invention of a  
20 new networking architecture founded upon a host of new technologies.

21 3. They succeeded. The inventors’ company, called Entropic  
22 Communications Inc. (“Entropic Inc.”), made the technology work. The company was  
23 awarded a portfolio of patents for the advances that made it possible. And the company  
24 spearheaded forming a new industry standard for the architecture, commonly called  
25 MoCA (Multimedia over Coax Alliance).

26 4. Today, MoCA is the backbone of data and entertainment services for tens  
27 of millions of customers. MoCA is widely used by every major provider in the  
28



1 industry, saving them billions of dollars in costs and avoiding the hassle of re-wiring  
2 for providers and customers alike. Unfortunately, the defendants take advantage of  
3 MoCA without paying appropriate licensing fees for the technology. This lawsuit is  
4 about redressing that wrong.

5         5. This is a civil action arising under the patent laws of the United States,  
6 35 U.S.C. § 1 *et seq.*, including specifically 35 U.S.C. § 271, based on the defendants'  
7 infringement of U.S. Patent Nos. 7,295,518 (the "'518 Patent"), 7,594,249 (the  
8 "'249 Patent") (together the "Network Patents"); U.S. Patent Nos. 7,889,759 (the  
9 "'759 Patent"), 8,085,802 (the "'802 Patent") (together the "Node Admission  
10 Patents"); U.S. Patent Nos. 9,838,213 (the "'213 Patent"), 10,432,422 (the "'422  
11 Patent") (together the "PQoS Flows Patents"); U.S. Patent Nos. 8,631,450 (the "'450  
12 Patent"), 8,621,539 (the "'539 Patent") (together the "Link Maintenance Patents");  
13 U.S. Patent No. 8,320,566 (the "'0,566 Patent" or the "OFDMA Patent"); U.S. Patent  
14 No. 10,257,566 (the "'7,566 Patent" or the "Network Coordinator Patent"); U.S.  
15 Patent No. 8,228,910 (the "'910 Patent" or the "Packet Aggregation Patent"); U.S.  
16 Patent No. 8,363,681 (the "'681 Patent" or the "Clock Sync Patent") (collectively ~~all~~  
17 ~~of the patents are referred to herein as~~, the "Patents-in-Suit" ~~or "Asserted Patents"~~).  
18 These patents incorporate various elements of technology set forth in the Multimedia  
19 over Coax Alliance standards (the "MoCA" standards).<sup>1</sup>

## 20 THE PARTIES

21         6. Entropic is a Delaware limited liability company with an office at 7150  
22 Preston Road, Suite 300, Plano, Texas 75024.

23         7. Entropic is the owner by assignment to all right, title, and interest to the  
24 Patents-in-Suit. Entropic is the successor-in-interest for the Patents-in-Suit.

25  
26  
27 <sup>1</sup> Each version of the MoCA standards is referred to herein as "MoCA 1.0," "MoCA  
28 1.1," and "MoCA 2.0."



1           8.     Upon information and belief, Comcast Corp. is a corporation organized  
2 and existing under the laws of Pennsylvania, with a principal place of business at 1701  
3 JFK Boulevard, Philadelphia, Pennsylvania 19103.

4           9.     Comcast Corp. has, as its registered agent in California, CT Corporation  
5 System, 330 N. Brand Blvd., Suite 700, Glendale, California 91203.

6           10.    Comcast Corp., along with the other defendants, develops, markets, sells,  
7 offers for sale and/or provides “Comcast” and “Xfinity” branded cable television  
8 services and equipment to customers.

9           11.    Comcast Communications is a limited liability company organized and  
10 existing under the laws of Delaware, with a principal place of business at 1701 JFK  
11 Boulevard, Philadelphia, Pennsylvania 19103. Upon information and belief, Comcast  
12 Communications is a subsidiary of Comcast Corp.

13           12.    Comcast Communications has, as its registered agent in California,  
14 CT Corporation System, 330 N. Brand Blvd., Suite 700, Glendale, California 91203.

15           13.    Comcast Communications, along with the other defendants, develops,  
16 markets, sells, offers for sale and/or provides “Comcast” and “Xfinity” branded cable  
17 television services and equipment to customers.

18           14.    Comcast Management is a limited liability company organized and  
19 existing under the laws of Delaware, with a principal place of business at 1701 JFK  
20 Boulevard, Philadelphia, Pennsylvania 19103. Upon information and belief, Comcast  
21 Management, is a subsidiary of Comcast Corp.

22           15.    Comcast Management has, as its registered agent in California,  
23 CT Corporation System, 330 N. Brand Blvd., Suite 700, Glendale, California 91203.

24           16.    Comcast Management, along with the other defendants, develops,  
25 markets, sells, offers for sale and/or provides “Comcast” and “Xfinity” branded cable  
26 television services and equipment to customers.  
27  
28



1           17. Comcast Corp. and/or Comcast Communications owns or leases, and  
2 maintains and operates several stores in this district by and through subsidiary limited  
3 liability companies that they own, manage and control, including Comcast of Santa  
4 Maria, LLC and Comcast of Lompoc LLC. Upon information and belief, Comcast  
5 Corp. and/or Comcast Communications (and/or personnel employed by them)  
6 negotiates and signs agreements on behalf of each of these entities.

7           18. Upon information and belief, Comcast Corp. and/or Comcast  
8 Communications are the corporate managers of their subsidiary LLCs that own or  
9 lease property in this district, and that own, store, sell, demonstrate, and lease  
10 equipment in this district. Comcast Corp. and/or Comcast Communications have the  
11 right to exercise near total control of each entity's operations through its LLC  
12 agreements with each entity.

13           19. In each of those stores, Comcast Corp. and/or Comcast Communications  
14 owns and stores equipment such as modems and set top boxes ("STBs") and  
15 demonstrates services provided via those products to Comcast customers by and  
16 through subsidiary limited liability companies that it manages and controls.

17           20. Upon information and belief, Comcast Corp. and/or Comcast  
18 Communications employs personnel that install, service, repair and/or replace  
19 equipment, as appropriate, in this district by and through subsidiary limited liability  
20 companies that it manages and controls.

21           21. Upon information and belief, Comcast Corp. and/or Comcast  
22 Communications have two wholly owned subsidiaries in this Judicial District of  
23 Central California that serve as their agents.

24           22. Comcast of Santa Maria, LLC ("Comcast Santa Maria") is a limited  
25 liability company organized and existing under the laws of Pennsylvania, with a  
26 principal place of business at 1701 JFK Boulevard, Philadelphia, Pennsylvania 19103.  
27 Comcast Santa Maria is a subsidiary of Comcast Corp.  
28



1           23. Comcast Santa Maria, along with the other defendants, markets, sells,  
2 offers for sale and/or provides “Comcast” and “Xfinity” branded cable television  
3 services and equipment to customers.

4           24. Comcast of Lompoc, LLC (“Comcast Lompoc”) is a limited liability  
5 company organized and existing under the laws of Pennsylvania, with a principal place  
6 of business at 1701 JFK Boulevard, Philadelphia, Pennsylvania 19103. Comcast  
7 Lompoc is a subsidiary of Comcast Corp.

8           25. Comcast Lompoc, along with the other defendants, markets, sells, offers  
9 for sale and/or provides “Comcast” and “Xfinity” branded cable television services  
10 and equipment to customers.

11           26. Upon information and belief, Comcast Communications, Comcast,  
12 Management, Comcast Santa Maria, and Comcast Lompoc are the agents of Comcast  
13 Corp. Upon information and belief, Comcast Corp. has complete and total control over  
14 its agents Comcast Communications, Comcast Management, Comcast Santa Maria,  
15 and Comcast Lompoc. Upon information and belief, Comcast Corp. shares  
16 management, common ownership, advertising platforms, facilities, distribution chains  
17 and platforms, stores, and accused product lines and products involving related  
18 technologies with its agents, including at least Comcast Communications, Comcast  
19 Management, Comcast Santa Maria, and Comcast Lompoc.

20           27. For example, Comcast Corp., Comcast Communications, Comcast  
21 Management, Comcast Santa Maria, and Comcast Lompoc all have the same principal  
22 place of business at 1701 JFK Boulevard, Philadelphia, Pennsylvania 19103.

23           28. The Comcast “Xfinity Residential Services Agreement” purports to bind  
24 Comcast’s customers, including those customers in this Judicial District to an  
25 agreement with Comcast Communications for, *inter alia*, the Accused Services  
26 (defined below) that Comcast’s customers receive through the infringing use of the  
27  
28



1 Accused MoCA Instrumentalities (defined below).<sup>2</sup> This agreement further provides  
2 that an entity other than Comcast Communications provides the services. Upon  
3 information and belief, the entity that provides the services to Comcast's customers  
4 and subscribers is Comcast Management.

5 29. Comcast Management further shares a leadership team with Comcast  
6 Corp.<sup>3</sup> For example, Brian Roberts is the Chairman and Chief Executive Officer of  
7 both Comcast Management and Comcast Corp.; Daniel Murdock is Executive Vice  
8 President and Chief Accounting Officer of both Comcast Corp. and Comcast  
9 Management; Francis Buono is Executive Vice President of Legal Regulatory Affairs  
10 and Senior Deputy General Counsel of both Comcast Corp. and Comcast  
11 Management; and Karen Buchholz is Executive Vice President, Administration of both  
12 Comcast Corp. and Comcast Management.

13 30. As further alleged herein, this Court has personal jurisdiction over the  
14 defendants and venue is proper in this Judicial District.

### 15 **PRE-SUIT DISCUSSIONS**

16 31. Prior to filing this Complaint, Entropic sent a communication by physical  
17 means to Comcast on August 9, 2022, in an attempt to engage Comcast and/or its  
18 agents in good faith licensing discussions regarding Entropic's patent portfolio,  
19 including the Patents-in-Suit. Comcast replied to the communication on October 10,  
20 2022, asking for additional information. On December 23, 2022 and January 2, 2023,  
21 Entropic sent Comcast another communication by both physical and electronic means  
22

23 <sup>2</sup> <https://www.xfinity.com/Corporate/Customers/Policies/SubscriberAgreement>.

24 <sup>3</sup> Compare names found in Exhibit A, [https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/communications-division/doc  
25 uments/video-franchising-and-broadband-analysis/video-franchising-main/applications  
26 -received-by-the-puc/2022/20220926-comcast-48a/comcast-48a-application.pdf](https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/communications-division/documents/video-franchising-and-broadband-analysis/video-franchising-main/applications-received-by-the-puc/2022/20220926-comcast-48a/comcast-48a-application.pdf), with  
27 the biographies of the identified personnel at Comcast's corporate leadership website,  
28 <https://corporate.comcast.com/company/leadership>.



1 regarding a separate license to Entropic's patents for the field of the standardized  
2 networking technology commonly called MoCA, and also seeking to discuss with  
3 Comcast a typical non-disclosure agreement in order to share such information.

#### 4 **ENTROPIC'S LEGACY AS AN INNOVATOR**

5 32. Entropic Communications, Inc. ("Entropic Inc."), the  
6 predecessor-in-interest to Plaintiff Entropic as to the Patents-in-Suit, was founded in  
7 San Diego, California in 2001 by Dr. Anton Monk, Itzhak Gurantz, Ladd El Wardani  
8 and others. Entropic Inc. was exclusively responsible for the development of the initial  
9 versions of the MoCA standards, including MoCA 1.0, ratified in 2006 and MoCA 1.1,  
10 ratified in 2007, and was instrumental in the development of MoCA 2.0, ratified in  
11 2010. It also developed Direct Broadcast Satellite ("DBS") Outdoor Unit ("ODU")  
12 single wire technology, and System-on-Chip ("SoC") solutions for set-top boxes  
13 (STBs) in the home television and home video markets. Entropic was widely known in  
14 the cable industry for these innovations and its foundational development of MoCA.

15 33. Under the technical guidance of Dr. Monk, Entropic Inc. grew to be  
16 publicly listed on the NASDAQ in 2007. After the public listing, the company  
17 acquired RF Magic, Inc. in 2007, a company specializing in DBS ODU technology and  
18 related hardware.

19 34. Additional growth between 2007 and 2015 bolstered the technical  
20 expertise of Entropic Inc. with respect to signal acquisition, stacking, filtering,  
21 processing, and distribution for STBs and cable modems.

22 35. For years, Entropic Inc. pioneered innovative networking technologies, as  
23 well as television and internet related technologies. These technologies simplified the  
24 installation required to support wideband reception of multiple channels for  
25 demodulation, improved home internet performance, and enabled more efficient and  
26 responsive troubleshooting and upstream signal management for cable providers.  
27 These innovations represented significant advances in the field, simplified the  
28



1 implementation of those advances, and reduced expenses for providers and customers  
2 alike.

3 **MAXLINEAR'S TRANSFER OF PATENTS TO ENTROPIC**

4 36. In 2015, MaxLinear, Inc. and MaxLinear, LLC (collectively,  
5 "MaxLinear")—leading providers of radio-frequency, analog, digital, and  
6 mixed-signal semiconductor solutions—acquired Entropic Inc., as well as the  
7 pioneering intellectual property developed by Dr. Monk and his team.

8 37. Plaintiff Entropic was established in 2021 [REDACTED]  
9 [REDACTED]  
10 [REDACTED]  
11 [REDACTED]  
12 [REDACTED]  
13 [REDACTED]  
14 [REDACTED]

15 38. [REDACTED]  
16 [REDACTED]

17 39. [REDACTED]  
18 [REDACTED]  
19 [REDACTED]

20 40. [REDACTED]  
21 [REDACTED]  
22 [REDACTED]  
23 [REDACTED]  
24 [REDACTED]  
25 [REDACTED]  
26 [REDACTED]  
27 [REDACTED]  
28 [REDACTED]



1 41. [REDACTED]

2 [REDACTED]

3 [REDACTED]

4 42. Entropic has the full right to pursue the patent infringement claims

5 asserted in this action against Comcast.

6 A. [REDACTED]

7 [REDACTED]

8 43. [REDACTED]

9 [REDACTED]

10 [REDACTED]

11 [REDACTED]

12 [REDACTED]

13 [REDACTED]

14 45. [REDACTED]

15 [REDACTED]

16 [REDACTED]

17 [REDACTED]

18 [REDACTED]

19 46. [REDACTED]

20 [REDACTED]

21 47. [REDACTED]

22 [REDACTED]

23 [REDACTED]

24 48. [REDACTED]



1 49. [REDACTED]

2 [REDACTED]

3 50. [REDACTED]

4 [REDACTED]

5 [REDACTED]

6 [REDACTED]

7 [REDACTED]

8 [REDACTED]

9 [REDACTED]

10 51. [REDACTED]

11 [REDACTED]

12 [REDACTED]

13 [REDACTED]

14 [REDACTED]

15 [REDACTED]

16 53. [REDACTED]

17 [REDACTED]

18 [REDACTED]

19 [REDACTED]

20 54. ~~53.~~ [REDACTED]

21 [REDACTED]

22 [REDACTED]

23 55. ~~54.~~ [REDACTED]

24 [REDACTED]

25 [REDACTED]

26

27

28



1 56. ~~55.~~ [REDACTED]

2 [REDACTED]

3 [REDACTED]

4 57. ~~56.~~ [REDACTED]

5 [REDACTED]

6 [REDACTED]

7 [REDACTED]

8 [REDACTED]

9 [REDACTED]

10 58. [REDACTED]

11 [REDACTED]

12 [REDACTED]

13 59. ~~57.~~ [REDACTED]

14 [REDACTED]

15 [REDACTED]

16 [REDACTED]

17 [REDACTED]

18 [REDACTED]

19 60. [REDACTED]

20 [REDACTED]

21 61. [REDACTED]

22 [REDACTED]

23 [REDACTED]

24 [REDACTED]

25 [REDACTED]

26 [REDACTED]

27 <sup>5</sup> On information and belief, the failure to capitalize “Service” in this section was a

28 typographical error.



[REDACTED]

62.

[REDACTED]

63.

[REDACTED]

64.

~~58.~~

[REDACTED]

65.

~~59.~~

[REDACTED]

66.

~~60.~~

[REDACTED]



**B. ~~C.~~ Comcast Has, and Continues, to Willfully and Intentionally Infringe Entropic's Non-SEP Patents<sup>56</sup>**



65. Comcast invested in Entropic Inc. once in 2003, and again in 2006.

66. Upon information and belief, Comcast substantively reviewed and analyzed ~~Entropic's~~ Entropic Inc.'s patents and patent applications related to the ~~Patents in Suit~~ Non-SEP Patents as part of its due diligence prior to investing in Entropic Inc.

67. In addition, Comcast has willfully infringed the Non-SEP Patents in at least the following ways.

1. The Charter Suits

~~67. Upon information and belief, Comcast substantively reviewed and analyzed Entropic's U.S. Patent No. 8,223,775 (the "'775 Patent"), duly issued on July 17, 2012 from an application filed September 30, 2003, as part of its due diligence prior to investing in Entropic in 2006.~~

~~68. Accordingly, upon information and belief, no later than the day prior to its latest investment in Entropic in 2006, Comcast knew or had every reason to know that Entropic owned the '775 Patent. Because Comcast knew of the '775 Patent and substantively reviewed its claims, Comcast began willfully infringing the '775 Patent no later than the dates it began offering its cable modem products and services, having knowledge that such use and deployment infringed the '775 Patent.~~

68. ~~69. Entropic filed a~~ On information and belief, Comcast had knowledge of its infringement of certain of the Non-SEP Patents based on its awareness of the patent infringement suit filed by Entropic against Charter Communications, Inc. ("Charter") in the Eastern District of Texas, Case No. 2:22-CV-00125-JRG ("the Charter Suit"), on April 27, 2022, ~~asserting.~~ This suit against Charter asserted the '775 Patent, ~~U.S. Patent No. 8,284,690 (the "'690 Patent"), U.S. Patent No. 8,792,008 (the "'008 Patent"), U.S. Patent No. 9,210,362 (the "'362 Patent"), U.S. Patent No. 9,825,826 (the "'826 Patent"), and U.S. Patent No. 10,135,682 (the "'682 Patent")~~ against Charter's provision of cable television and internet services, cable modem products and STBs.



1           69. On information and belief, Comcast had knowledge of its infringement of  
2 certain of the Non-SEP Patents based on its awareness of the patent infringement suit  
3 filed by Entropic against Charter in the Eastern District of Texas, Case No.  
4 2:23-CV-00052-JRG, on February 10, 2023. This second suit against Charter asserted  
5 the '866 Patent and the '206 Patent against Charter's provision of cable television and  
6 internet services, cable modem products and STBs. The complaint was amended on  
7 October 31, 2023, to assert the '275 Patent and '438 Patent against Charter.

8           70. Both Charter and Comcast are part of the close-knit business community  
9 that is the cable industry, which is led by key industry players. These key players  
10 work collaboratively to develop new technology and programs to drive the industry  
11 forward, including through organizations like MoCA and the Society of Cable  
12 Telecommunications Engineers.



1           71. Comcast and Charter actively collaborate together, have monthly  
2 meetings across various departments, and have even collaborated together on accused  
3 technologies. Specifically, Comcast and Charter have collaborated together on Profile  
4 Management Application (“PMA”) technology and the implementation of full band  
5 capture.

6           72. Comcast’s PMA implementation infringes the ’682 Patent in substantially  
7 the same manner as Charter’s PMA implementation. Given the amount of  
8 collaboration that occurs between Charter and Comcast, Comcast was aware of the  
9 accusations against Charter’s PMA implementation.

10           73. Comcast’s implementation of remote spectrum monitoring functionality  
11 in its Proactive Network Maintenance (“PNM”) system infringes the ’008 and ’826  
12 Patents in substantially the same manner as Charter’s implementation of remote  
13 spectrum monitoring in its PNM system. Given the amount of collaboration that  
14 occurs between Charter and Comcast, Comcast was aware of the accusations against  
15 Charter’s implementation of remote spectrum monitoring in its PNM system.  
16 Additionally, Comcast collects information regarding the upstream channels as part of  
17 the operation of its network, in a similar manner as Charter. This collection of  
18 information regarding the upstream channels as part of the operation of a cable  
19 network infringes the ’690 Patent.

20           74. Comcast’s usage of full band capture-enabled cable modems and STBs  
21 infringes the ’362, ’866, ’206 and ’275 Patents in substantially the same manner as  
22 Charter’s usage of full band capture-enabled cable modems and STBs. Given the  
23 amount of collaboration that occurs between Charter, Comcast and its common  
24 supplied of the cable modems, STBs and underlying full band capture system-on-chips  
25 (or SoCs), Comcast was aware of the accusations against Charter’s usage of full band  
26 capture-enabled cable modems and STBs.



1        75. Comcast uses cable modem termination system (“CMTS”) hardware and  
2 software as part of its cable network.

3        76. Comcast and Charter also collaborate together at events for the Society of  
4 Cable Telecommunications Engineers (“SCTE”), of which both Comcast and Charter  
5 are members. Among other things, Comcast and Charter participate in panels together,  
6 share data and achievements related to SCTE, and work on peer-reviewed papers  
7 together.

8        77. Charter and Comcast also “team up” to offer streaming devices and other  
9 technology to customers. Indeed, The New York Times published an article about  
10 such a joint venture between Comcast and Charter on April 27, 2022, the very same  
11 day that the first suit against Charter was filed.

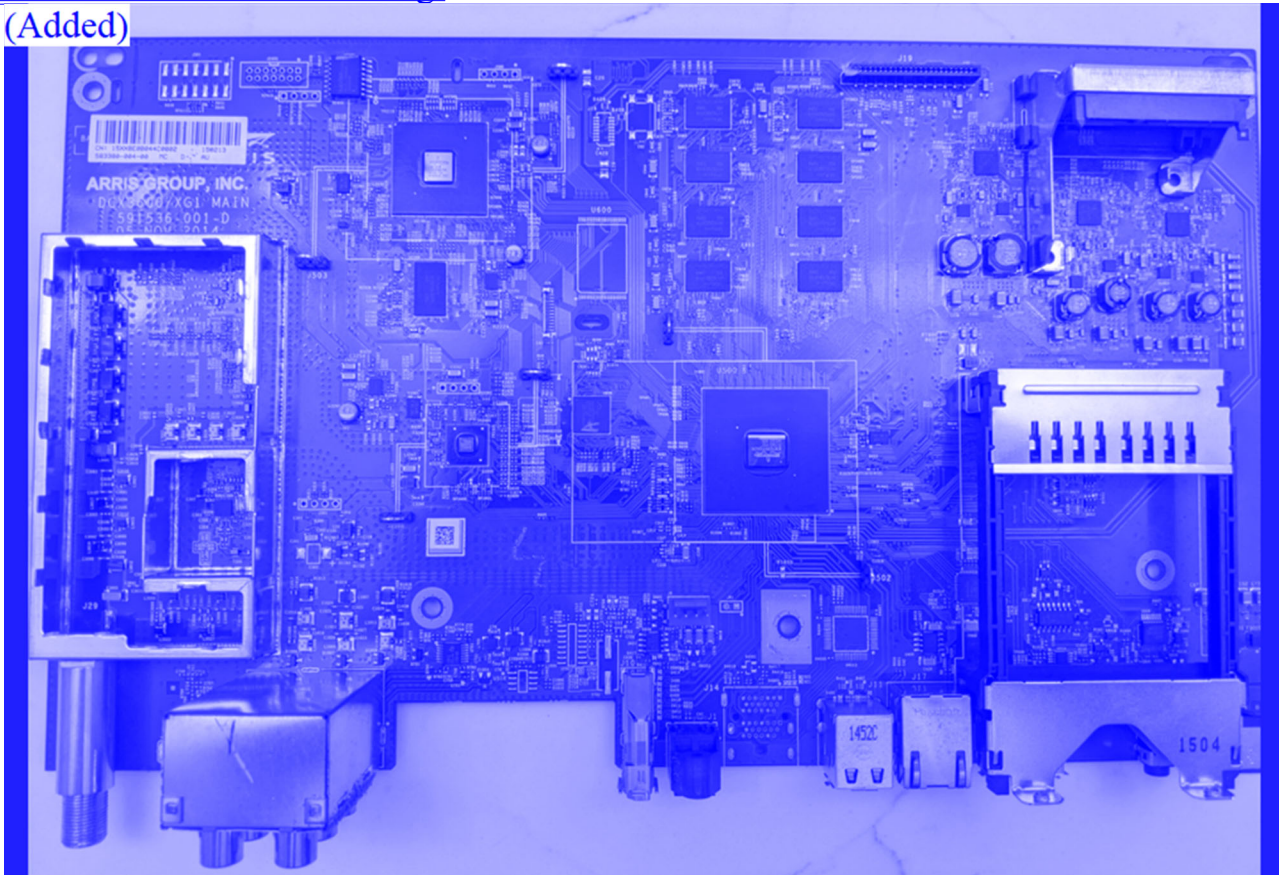
12        78. As evidenced by this article, Comcast knows that Charter utilizes  
13 technology that functions almost identically to Comcast’s technology.

14        79. Among other things, Charter and Comcast utilize similar product  
15 offerings that incorporate the same technologies. Charter and Comcast purchase their  
16 products, including cable modems, STBs, and CMTS hardware and software, from the  
17 same third parties. These products utilize the same or similar SoCs and other  
18 processors and provide similar functionality. For example, both Charter and Comcast  
19 provide whole-home DVR solutions utilizing MoCA to create an in-home network  
20 over the on-premises coaxial cabling. Similarly, both Charter and Comcast utilize  
21 cable modems having Broadcom BCM3390 SoCs and STBs utilizing a combination of  
22 Broadcom full-band capture SoCs utilizing a combination of Broadcom full-band  
23 capture SoCs to interface with the cable network and STB SoCs to decode and display  
24 television content.

25        80. For example, one supplier of STBs, Arris, provides the DCX3600 to both  
26 Comcast and Charter. Comcast refers to the Arris DCX3600 as the Arris MX011ANM  
27 or XG1-A, and Charter refers to it simply as the Arris DCX3600. An image of the  
28



1 circuit board included in the Arris DCX3600 is shown below, clearly showing both the  
2 DCX3600 and XG1 branding:  
3 (Added)





1        81. The two Charter suits discussed herein asserted the same patents and  
2 involved largely the same technology as is at issue in this action.

3        82. Given the close business relationship between Comcast and Charter, as  
4 well as the joint ventures that Comcast was pursuing with Charter when these suits  
5 were filed against Charter, Comcast was almost certainly aware of their filings.

6        83. ~~70.~~ Upon information and belief, and based on Comcast's awareness of  
7 the substantial similarities between Comcast's and Charter's technology and products,  
8 Comcast analyzed the ~~causes of action in the~~ claims asserted against Charter-Suit, the  
9 Patents-in-Suit, and the asserted patents Accused Products.

10        ~~71.~~ Upon information and belief, Comcast then analyzed its own products'  
11 functionality in light of the patents asserted ~~in~~ against Charter, and it confirmed that its  
12 own products were functionally identical to the Charter ~~Suit.~~

13        ~~72.~~ products accused. Upon information and belief, Comcast monitored the  
14 ongoing prosecution of the '362 Patent family, and therefore was aware of the U.S.  
15 Patent No. 11,381,866 (the "'866 Patent") issued on July 5, 2022, and U.S. Patent No.  
16 11,399,206 (the "'206 Patent") issued on July 26, 2022.

17        84. ~~73.~~ Upon information and belief, Comcast analyzed its products'  
18 functionality in light of the '866 Patent.

19        85. ~~74.~~ Upon information and belief, Comcast analyzed its products'  
20 functionality in light of the '206 Patent.

21        86. Upon information and belief, Comcast thereafter determined that its  
22 products infringe the Non-SEP Patents in substantially the same manner as Charter.

23        87. Nevertheless, Comcast continued to make, sell, or offer for sell the  
24 infringing products.

25        88. ~~75.~~ Upon information and belief, Comcast requested indemnification from  
26 Comcast's suppliers for each of the patents asserted against Charter, including the  
27 MoCA-related patents, prior to Entropic filing the current action.  
28



1           89.   Comcast’s request for indemnification evidences its knowledge of the risk  
2 that it infringed at least Entropic’s Non-SEP Patents, and that a suit similar to the  
3 Charter Suit was likely to be initiated against Comcast.

4           **2. The DISH and DirecTV Suits**

5           90.   ~~76.~~—Entropic filed a patent infringement suit against Dish Network  
6 Corporation, DISH Network, LLC, and Dish Network Service, LLC (collectively,  
7 “Dish”) in the Eastern District of Texas, Case No. 2:22-CV-00076, on March 9, 2022,  
8 asserting infringement of three Entropic patents, including the ’008 Patent (the “Dish  
9 Suit”).

10           91.   ~~77.~~—Entropic filed a patent infringement suit against DirecTV, LLC,  
11 AT&T, Inc., AT&T Services, Inc., and AT&T Communications, LLC in the Eastern  
12 District of Texas, Case No. 2:22-CV-00075 on March 9, 2022, asserting infringement  
13 of three Entropic patents, including the ’008 Patent (the “DirecTV Suit”).

14           92.   ~~78.~~—Upon information and belief, Comcast ~~discussed~~contacted RPX  
15 Corporation (“RPX”) regarding the Charter Suit, Dish Suit, and DirecTV Suit ~~with~~  
16 ~~RPX Corporation (“RPX”)~~after being served with the complaint in these actions.  
17 Either before or shortly after its discussions with RPX, Comcast substantively  
18 reviewed and analyzed the patents asserted in the Charter Suit, Dish Suit, and DirecTV  
19 Suit.

20           ~~79. Upon information and belief, Comcast subsequently suggested that RPX reach out to~~  
21 ~~Entropic to try to resolve the matters.~~

22           **3. Comcast’s Relationship with MaxLinear**



1           93. Comcast has willfully infringed the Non-SEP Patents based on knowledge  
2 it gained from Patrick Tierney. Tierney, one of the named inventors of the '008 Patent  
3 and '826 Patent, now works at Comcast. Accordingly, upon information and belief,  
4 Comcast knew of the aforementioned Non-SEP Patents as early as the day Patrick  
5 Tierney was hired. For example, upon information and belief, Comcast looked at  
6 patents which named Patrick Tierney as an inventor as part of the process of  
7 determining whether to offer him employment at Comcast.

8           94. Patrick Tierney and other MaxLinear employees frequently met with  
9 Comcast and discussed the technologies of both MaxLinear and Entropic Inc. that  
10 practiced the Non-SEP Patents . Thus, Patrick Tierney was well aware of the  
11 technology and functionality of the Non-SEP Patents.

12           95. Indeed, before his employment at Comcast, Patrick Tierney often met  
13 with Comcast personnel to discuss new technology for which MaxLinear and Entropic  
14 Communications, Inc. had recently applied for or received patent protection.

15           96. For example, Patrick Tierney met with Sam Chernak of Comcast on  
16 December 20, 2012, less than a month after the '566 Patent issued. Upon information  
17 and belief, Mr. Tierney told Mr. Chernak about the '566 Patent.

18           97. As another example, Comcast met with MaxLinear to ask MaxLinear to  
19 support a low cost D3 modem on January 20, 2013, less than a month after the '681  
20 Patent issued.

21           98. In his role at Comcast, on information and belief, Patrick Tierney shared  
22 what he knew about the functionality and operation of the Non-SEP Patents with other  
23 Comcast personnel, so that Comcast could continue to create products that infringe  
24 upon the Non-SEP Patents.



1           99. Comcast also learned about the functionality of the Non-SEP Patents  
2 through other events it attended, including the 2015 International Broadcasting  
3 Convention, where MaxLinear presented information about new products and  
4 technology that implemented the Non-SEP Patents.

5           100. MaxLinear also held several business discussions with Comcast in 2015,  
6 wherein MaxLinear discussed its products and technology that implemented the  
7 Non-SEP Patents and explained how that technology could benefit Comcast's  
8 business.

9           101. Specifically, MaxLinear gave a presentation to Comcast in March 2015  
10 wherein it discussed confidential, new technology being developed by MaxLinear and  
11 Entropic Inc. MaxLinear's March 2015 presentation specifically referenced that much  
12 of this technology was covered by "[a]lmost 2000 issued and pending patents."

13           102. Finally, Comcast has been willfully infringing since at least October  
14 2021, when it intentionally misappropriated MaxLinear's technology and related  
15 patents by disclosing that information to MaxLinear's competitor.

16           103. In 2020, Comcast began pursuing full duplex ("FDX") technology to  
17 implement DOCSIS 4.0, which was intended to enable higher speeds for both  
18 downstream and upstream communications.

19           104. However, Comcast soon realized that the only then-viable FDX  
20 architecture could not be deployed to serve the majority of Comcast's network.

21           105. Comcast turned to MaxLinear to solve this problem, as MaxLinear was a  
22 well-known innovator in the FDX space. Indeed, since at least 2016, Comcast itself  
23 acknowledged that MaxLinear was the only company able to deliver viable FDX  
24 technology.

25           106. In 2020, after entering into a non-disclosure agreement, MaxLinear  
26 shared its confidential FDX technologies with Comcast in the hopes of expanding their  
27 business relationship.



1        107. On information and relief, Comcast knew that MaxLinear’s disclosures  
2 regarding the FDX technology were confidential and were owned by MaxLinear,  
3 including by virtue of the non-disclosure agreement signed by Comcast, as well as the  
4 confidentiality designations MaxLinear marked its FDX disclosures with.

5        108. On information and belief, in October 2021, Comcast nevertheless took  
6 credit for MaxLinear’s technology in a published article. See Elad Nafshi, *Announcing*  
7 *Another 10G Milestone Amidst a Flurry of Innovation*, Comcast (Oct. 14, 2021),  
8 <https://tinyurl.com/yphyu6a9>.

9        109. In September 2022, Richard Prodan, one of the Comcast employees who  
10 attended and received copies of MaxLinear’s confidential presentation on the design of  
11 its FDX-amplifier solution, published an industry paper that described an  
12 FDX-amplifier design that was materially identical to the one MaxLinear developed  
13 and confidentially shared with Comcast.

14        110. On information and belief, Comcast was aware that its use of  
15 MaxLinear’s FDX technology infringed the Non-SEP Patents, including by virtue of  
16 their longstanding business relationship during which MaxLinear had given  
17 presentations to Comcast that stated that MaxLinear’s technology was  
18 patent-protected.

19        111. At the very least, Comcast was willfully blind to the fact that its  
20 misappropriation of MaxLinear’s FDX technology infringed upon the Non-SEP  
21 Patents.

22        **4. Comcast’s Willful Infringement of Specific Non-SEP Patents**

23        112. Upon information and belief, Comcast substantively reviewed and  
24 analyzed Entropic’s U.S. Patent No. 8,223,775 (the “775 Patent”), duly issued on July  
25 17, 2012 from an application filed September 30, 2003, as part of its due diligence  
26 prior to investing in Entropic in 2006.

27        113. Accordingly, upon information and belief, no later than the day prior to its  
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1 latest investment in Entropic in 2006, Comcast knew or had every reason to know that  
2 Entropic owned the '775 Patent. Because Comcast knew of the '775 Patent and  
3 substantively reviewed its claims, Comcast began willfully infringing the '775 Patent  
4 no later than the dates it began offering its cable modem products and services, having  
5 knowledge that such use and deployment infringed the '775 Patent.

6 114. As addressed above, Comcast has willfully infringed at least the '362  
7 patent, the '826 patent, and the '206 patent through its knowledge gained from the  
8 Charter litigation, and was aware of (and substantively analyzed its infringement of)  
9 the other Non-SEP Patents no later than the letter sent by Entropic in August 2022.

10 115. Comcast has also willfully infringed at least the '682 Patent as evidenced  
11 by its own patents that cite to U.S. Patent No. 9,419,858 (the '858 Patent"), which is  
12 the ultimate parent of the '682 Patent. Specifically, Comcast's patents including U.S.  
13 Patent No. 11,191,087; U.S. Patent No. 10,582,515; U.S. Patent No. 11,758,574 cite  
14 the '858 Patent.

15 116. Comcast's reference to the '858 Patent, which is closely related to and  
16 involves similar technology and functionality as the '682 Patent, evidences Comcast's  
17 awareness that it infringes upon '682 Patent.

18 117. Further, Comcast filed an application for U.S. Patent No. 9,178,765 on  
19 July 23, 2013, in the same month that the application for the '682 Patent was filed. On  
20 information and belief, Comcast was aware of the '682 Patent based on the  
21 investigation it undertook during the application and prosecution process for U.S.  
22 Patent No. 9,178,765. Thus, Comcast has willfully infringed the '682 Patent since at  
23 least July 23, 2013.

24 118. Accordingly, Comcast either knew about the Non-SEP Patents, or  
25 alternatively engaged in a scheme to be willfully blind to the existence of the Non-SEP  
26 Patents.

27 **C. D. Comcast Has, and Continues, to Willfully and Intentionally Infringe the**  
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**Patents-in-Suit**

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1 119. Comcast invested in Entropic once in 2003, and again in 2006.

2 120. Upon information and belief, Comcast substantively reviewed and  
3 analyzed Entropic's patents and patent applications related to the Entropic's MoCA  
4 standard patents as part of its due diligence prior to investing in Entropic.

5 121. ~~80.~~ Upon information and belief, as part of its due diligence prior to  
6 investing in Entropic in 2006, Comcast substantively reviewed and analyzed the  
7 following Patents-in-Suit: the '518 Patent, duly issued on November 13, 2007 from an  
8 application filed December 18, 2002, an application filed August 19, 2002 and, *inter*  
9 *alia*, a provisional application filed August 30, 2001; the '249 Patent, duly issued on  
10 September 22, 2009 from an application filed July 21, 2001, and a provisional  
11 application filed May 4, 2001; the '759 Patent, duly issued on February 15, 2011 from  
12 an application filed July 12, 2004, an application filed August 29, 2002, and, *inter alia*,  
13 a provisional application filed August 30, 2001; the '802 Patent, duly issued on  
14 December 27, 2011 from an application filed December 2, 2005, and a provisional  
15 application filed December 2, 2004; '450 Patent, duly issued on January 14, 2014,  
16 from an application filed September 19, 2005 and, *inter alia*, a provisional application  
17 filed December 2, 2004; the '539 Patent, duly issued on December 31, 2013 from an  
18 application filed September 29, 2005 and, *inter alia*, a provisional application filed  
19 December 2, 2004; the '7,566 Patent, duly issued on April 9, 2019 from an application  
20 filed February 7, 2017, an application filed September 19, 2005, and, *inter alia*, a  
21 provisional application filed December 2, 2004 (collectively, the "Pre-Investment  
22 Patents"). On information and belief, Comcast knew, based on its own analysis and  
23 also potentially statements from Entropic itself, that these patents were  
24 standard-essential to MoCA, such that practicing the MoCA standard would infringe  
25 these patents.  
26  
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1           122. ~~81.~~—Upon information and belief, no later than the day prior to its latest  
2 investment in Entropic in 2006, Comcast knew or had every reason to know that  
3 Entropic owned the Pre-Investment Patents related to the MoCA technology such that  
4 deployment of MoCA standard-compliant devices would infringe patents owned by  
5 Entropic.

6           123. ~~82.~~—Because Comcast knew of the Pre-Investment Patents and  
7 substantively reviewed such Patents, Comcast began willfully infringing the  
8 Pre-Investment Patents no later than the dates it began offering the Accused Services  
9 as alleged herein, having knowledge that such use and deployment infringed the  
10 Pre-Investment Patents.

11           124. ~~83.~~—No later than 2010 and continuing to the present, Comcast has used  
12 products that provided signals, programming and content utilizing a data connection  
13 carried over a coaxial cable network in accordance with the MoCA standards,  
14 including at least the Arris DCX3200, DCX3400, DCX3500, XG1-A, XG1v3, XG1v4,  
15 XG2v2, Ariss MR150CNM, Pace PR150BNM, Pace PX032ANI, Pace PXD01ANI,  
16 Samsung SR150BNM, and similarly operating devices. Because Comcast was already  
17 aware of Entropic's Pre-Investment Patents and knew that those patents were  
18 standard-essential, Comcast knew that its use of these devices would directly infringe  
19 the Pre-Investment Patents. Despite this knowledge, Comcast willfully infringed the  
20 Pre-Investment Patents beginning no later than 2010.

21           **1. Comcast's Involvement in MoCA**

22           125. ~~84.~~—Upon information and belief, Comcast was involved with and/or a  
23 member of MoCA from the earliest days of the MoCA, through at least August 2019.  
24 Indeed, Comcast was a member of the MoCA board of directors.<sup>67</sup>

25  
26  
27 <sup>67</sup> See <https://mocalliance.org/about/faqs.php>.  
28



1        126. As an early and active member of MoCA, Comcast helped to develop the  
2 MoCA standard, and therefore would have been knowledgeable about the technology  
3 essential to the practice of that standard.

4        127. Upon information and belief, Comcast was aware that Entropic, its close  
5 partner in the endeavor to grow and developed the MoCA standard, owned patents for  
6 its technology that was MoCA-standard-compliant.<sup>8</sup>

7        128. Specifically, Comcast would have been aware of at least the '249 Patent,  
8 which was filed on July 21, 2001; the '518 Patent, which was filed on December 18,  
9 2002; the '759 Patent, which was filed on July 24, 2004; the '450 Patent, which was  
10 filed on September 19, 2005; the '539 Patent, which was filed on September 29, 2005;  
11 and the '802 Patent, which was filed on December 2, 2005. These Patents, all of  
12 which are essential to the practice of the MoCA standard, were filed during the time  
13 that MoCA was being developed by Entropic Inc., Comcast, and others.

14        129. ~~85.~~ Upon information and belief, no later than the day prior to its latest  
15 investment in Entropic in 2006, any reasonable commercial party in Comcast's  
16 position, with Comcast's knowledge, would perceive a substantial likelihood that  
17 deployment of MoCA standard-compliant devices would infringe on Pre-Investment  
18 Patents owned by Entropic.

19        130. ~~86.~~ On information and belief, Comcast continued to monitor and analyze  
20 Entropic's MoCA-related patents and was aware of later-filed patents that are  
21 standard-essential to MoCA simply due to the importance of MoCA to Comcast's  
22 business and Comcast's later involvement as a board member of the MoCA.

23        131. ~~87.~~ As a member of the MoCA, Comcast was well aware that Entropic,  
24 the owner of the Patents-in-Suit, was the leading contributor of technology to the  
25

26 <sup>8</sup> See  
27 [https://www.sec.gov/Archives/edgar/data/1227930/000122793015000006/entr201412](https://www.sec.gov/Archives/edgar/data/1227930/000122793015000006/entr2014123110-k.htm)  
28 [3110-k.htm](https://www.sec.gov/Archives/edgar/data/1227930/000122793015000006/entr2014123110-k.htm).



standards promulgated by MoCA, which are implicated by the claims of patent infringement herein. Indeed, Comcast was aware that, at the time, Entropic was the only entity capable of developing the technology necessary to practice the MoCA standard.

132. 88.—Upon information and belief, Comcast knew that MoCA standard-compliant devices had tremendous success, given the public success through Verizon Wireless’s deployment of Fios.

133. Comcast also willfully infringed the ’518 Patent by virtue of its involvement in MoCA. On October 28, 2008, Anton Monk, the Vice President of Technology for Entropic Inc., disclosed Entropic Inc.’s ownership of the ’518 Patent via email to the MoCA Board of Directors.

134. Attached to this email was a document entitled “Disclosure of Intellectual Property,” which represents to the MoCA Board of Directors that the ’518 Patent was essential to the practice of the MoCA standard.

135. On information and belief, Comcast was a member of the Board at the time and therefore received this notice from Entropic.

136. Comcast therefore had direct notice of the ’518 Patent and that the ’518 Patent is essential to the practice of the MoCA standard.

137. The ’759 Patent is a continuation-in-part of the ’518 Patent. Given the close relationship between the ’759 Patent and the ’518 Patent, Comcast also was on notice that the ’759 Patent was owned by Entropic Inc. and is essential to the practice of the MoCA standard.

138. At the very least, Comcast engaged in a scheme to be willfully blind to the existence of the ’759 Patent and the fact that it is essential to the practice of MoCA standard based on its relation to the ’518 Patent.



1 2. Comcast's Relationship with MaxLinear, Inc.

2 139. 89. Comcast and MaxLinear, Inc. were engaged in a longstanding  
3 commercial relationship for years. Upon information and belief, Comcast knew that  
4 MaxLinear, Inc. was a member of MoCA since at least 2011.

5 140. 90. Comcast and MaxLinear, Inc. were both board members of MoCA  
6 from at least 2015 through August 2019. By virtue of Comcast's participation in  
7 MoCA and its ongoing, extensive use of MoCA standards, on information and belief,  
8 Comcast monitored and reviewed the publication and issuance of patents that would be  
9 standard-essential, including MaxLinear and Entropic ~~Communications~~-Inc. patents.  
10 Because Comcast was using the devices that practiced the MoCA standards, Comcast  
11 willfully infringed each MaxLinear and Entropic ~~Communications~~-Inc. patent that was  
12 standard-essential to MoCA no later than shortly after the issuance of those patents.  
13 To the extent Comcast did not engage in such review, it constitutes willful blindness to  
14 patent infringement due to Comcast's knowledge of the foundational role and  
15 contributions of Entropic ~~Communications~~-Inc. and MaxLinear to the MoCA  
16 standards.

17 ~~91. Upon information and belief, Comcast was aware that Entropic Communications Inc.~~  
18 ~~owned patents that were and are essential to the practice of the MoCA standard.<sup>7</sup>~~

19 141. 92. At least as early as January 1, 2020, Comcast knew that MaxLinear  
20 owned patents that were essential to practicing the technology embodied in one or  
21 more standards promulgated by MoCA.

22 ~~93. Entropic filed a patent infringement suit against ViXS Systems, Inc. and ViXS USA, Inc.~~  
23 ~~in the Southern District of California, Case No. 13 CV 1102 WQHBGS ("the ViXS Suit"), on May~~  
24

25  
26 <sup>7</sup> See

27 [https://www.sec.gov/Archives/edgar/data/1227930/000122793015000006/entr201412](https://www.sec.gov/Archives/edgar/data/1227930/000122793015000006/entr2014123110-k.htm)  
28 [3110-k.htm](https://www.sec.gov/Archives/edgar/data/1227930/000122793015000006/entr2014123110-k.htm).



8, 2013, asserting infringement of the '759 Patent and the '518 Patent. Both patents are essential to the standards developed and promulgated by the MoCA.

~~94. Upon information and belief, as a member of the MoCA, Comcast analyzed the claims in the ViXS Suit and the Asserted Patents.~~

~~95. Upon information and belief, Comcast analyzed its products' functionality in light of the patents asserted in the ViXS Suit.~~

~~96. Because Comcast already was using and deploying devices practicing the MoCA standards (and continued to do so), Comcast willfully infringed the '759 and '518 Patents no later than May 8, 2013, after substantively analyzing the complaint and Asserted Patents from the ViXS Suit.~~

~~97. As addressed above, Comcast has willfully infringed at least the '759 Patent and the '518 Patent through its knowledge gained from the ViXS Suit, and was aware of (and substantively analyzed its infringement of) the other Patents in Suit no later than the letter sent by Entropic in August 2022.~~

~~98. As a member of MoCA, Comcast was well aware that Entropic, the owner of the MoCA Patents in the ViXS Suit, was the leading contributor of technology to the standards promulgated by MoCA, which are implicated by the claims of patent infringement in the ViXS Suit.~~

~~99. Additionally, Comcast and MaxLinear, Inc. were engaged in a longstanding commercial relationship for years.~~

~~100. Upon information and belief, Comcast knew that MaxLinear, Inc. acquired Entropic Communications Inc. in 2015.~~

142. ~~101.~~ Comcast knew that MaxLinear acquired Entropic ~~Communications~~ Inc. and its patents in 2015.<sup>89</sup> Because Comcast already knew it was willfully infringing patents owned by Entropic ~~Communications~~ Inc., Comcast therefore knew that it was willfully infringing patents that were standard-essential to MoCA that now

<sup>89</sup> See [https://investors.maxlinear.com/annual-reports?form\\_type=10-K&year=](https://investors.maxlinear.com/annual-reports?form_type=10-K&year=).



1 were owned by MaxLinear no later than 2015.

2 143. ~~102.~~ [REDACTED]

3 [REDACTED]

4 [REDACTED]

5 [REDACTED]

6 [REDACTED]

7 [REDACTED]

8 144. ~~103.~~ [REDACTED]

9 [REDACTED]

10 [REDACTED]

11 [REDACTED]

12 145. ~~104.~~ [REDACTED]

13 [REDACTED]

14 [REDACTED]

15 [REDACTED]

16 [REDACTED]

17 [REDACTED]

18 146. ~~105.~~ [REDACTED]

19 [REDACTED]

20 [REDACTED] related to

21 non-standardized technologies deployed in the cable television and/or cable internet

22 businesses, technologies that Comcast uses and deploys.

23 147. ~~106.~~ Despite this knowledge, Comcast continued to use and deploy

24 devices practicing the MoCA standards and therefore willfully infringed patents

25 owned by MaxLinear, including the Patents-in-Suit.

26 148. ~~107.~~ Accordingly, Comcast either knew about the Patents-in-Suit, or

27 alternatively engaged in a scheme to be willfully blind to the existence of the

28



1 Patents-in-Suit. Comcast therefore willfully infringed at least the Pre-Investment  
2 Patents, and later-issued MoCA patents, ~~and the patents asserted in the ViXS Suit~~ no  
3 later than the day prior to [REDACTED]

4 149. ~~108.~~ Upon information and belief, in addition to the knowledge as set  
5 forth above, one of the named inventors of the '008 Patent and '826 Patent, as set forth  
6 in Entropic's concurrently filed action *Entropic v. Comcast, et al.*, No.  
7 2:23-cv-1050-JWH-KES, was Patrick Tierney. Mr. Tierney now works at Comcast;  
8 thus, upon information and belief, Comcast knew of the aforementioned  
9 Patents-in-Suit as early as the day Mr. Tierney was hired.

10 150. ~~109.~~ Comcast also attached to its own motion to dismiss [REDACTED]  
11 [REDACTED]  
12 [REDACTED]  
13 [REDACTED] *See Entropic v. Comcast*, No. 2:23-cv-1050-JWH-KES, at Dkt. No. 39-1, Ex.  
14 A. [REDACTED]  
15 [REDACTED]  
16 [REDACTED]

17 151. ~~110.~~ Comcast also willfully infringed two other MaxLinear patents no  
18 later than June 9, 2022. Specifically, during prosecution of Comcast's 17/201,189  
19 patent application, the patent examiner cited to MaxLinear, Inc.'s MoCA-related U.S.  
20 Patent No. 10,075,333 (the "'333 Patent") in a non-final rejection, which Comcast  
21 received on June 9, 2022. Additionally, the '116 Patent was cited during prosecution  
22 of Comcast's patent application 16/777,622. The examiner cited MaxLinear, Inc.'s  
23 MoCA-related U.S. Patent No. 10,285,116 ("'116 Patent")'s publication in a non-final  
24 rejection, which Comcast received on October 16, 2020. On information and belief, no  
25 later than June 9, 2022, Comcast substantively reviewed and analyzed the '333 Patent.  
26 On information and belief, no later than October 16, 2020, Comcast substantively  
27 reviewed and analyzed the '116 Patent. On information and belief, Comcast has  
28



1 willfully infringed the '333 and '116 Patents beginning no later than June 9, 2022 and  
2 October 16, 2020, respectively.

3 3. The ViXS Suit

4 152. Entropic filed a patent infringement suit against ViXS Systems, Inc. and  
5 ViXS USA, Inc. in the Southern District of California, Case No.  
6 13-CV-1102-WQHBGS ("the ViXS Suit"), on May 8, 2013, asserting infringement of  
7 the '759 Patent and the '518 Patent. Both patents are essential to the standards  
8 developed and promulgated by the MoCA.

9 153. Upon information and belief, as a member of the MoCA, Comcast  
10 analyzed the claims in the ViXS Suit and the patents asserted in that case, which  
11 included the '759 and '518 Patents.

12 154. Upon information and belief, Comcast analyzed its products'  
13 functionality in light of the patents asserted in the ViXS Suit.

14 155. Because Comcast already was using and deploying devices practicing the  
15 MoCA standards (and continued to do so), Comcast willfully infringed the '759 and  
16 '518 Patents no later than May 8, 2013, after substantively analyzing the complaint  
17 and the patents asserted in the the ViXS Suit.

18 156. As addressed above, Comcast has willfully infringed at least the '759  
19 Patent and the '518 Patent through its knowledge gained from the ViXS Suit, and was  
20 aware of (and substantively analyzed its infringement of) the other Patents-in-Suit no  
21 later than the letter sent by Entropic in August 2022.

22 157. As a member of MoCA, Comcast was well aware that Entropic Inc., the  
23 owner of the MoCA Patents in the ViXS Suit, was the leading contributor of  
24 technology to the standards promulgated by MoCA, which are implicated by the  
25 claims of patent infringement in the ViXS Suit.



1 **D. Comcast has willfully infringed each of the Patents-in-Suit through its**  
2 **post-suit conduct.**<sup>10</sup>

3 158. Despite having knowledge of its infringement of the Patents-in-Suit by  
4 virtue of Entropic's original Complaint, its First Amended Complaint, and its  
5 infringement contentions, Comcast continues to make, use, sell, or offer for sale the  
6 Accused Products. Thus, Comcast continues to willfully infringe the Patents-in-Suit.

7 159. Further, on December 1, 2023, MaxLinear, Inc. filed a Counterclaim  
8 against Comcast in the Southern District of New York ("SDNY") containing detailed  
9 allegations of Comcast's misappropriation of MaxLinear's trade secrets. These  
10 allegations shed further light on Comcast's willful infringement of the Patents-in-Suit.

11 160. Even if Comcast had not willfully infringed the Patents-in-Suit,  
12 MaxLinear, Inc. provided notice of termination of the VSA to Comcast on May 18,  
13 2023, and the VSA is therefore no longer in effect.

14 **1. Original Complaint**

15 161. Before the filing of this Second Amended Complaint, on February 16,  
16 2023, Comcast accepted service of Entropic's original Complaint alleging  
17 infringement of the same Patents-in-Suit. See DE 1. Entropic hereby incorporates its  
18 original Complaint into this Second Amended Complaint by reference.

19 162. Entropic's original Complaint specifically described the infringing nature  
20 of the Accused Products, which are the same as those described herein. Further, the  
21 original complaint set forth detailed allegations of how each of the Patents-in-Suit was  
22 infringed by one of or more of the Accused Products.

23  
24 <sup>10</sup> Entropic has filed a motion for leave to supplement its complaint with the  
25 allegations contained in Section E herein contemporaneously with this Second  
26 Amended Complaint. This motion requests leave to include allegations of events that  
27 occurred after the filing of the original complaint, and it includes a redlined copy of  
28 the proposed supplemental pleading to Entropic's First Amended Complaint,  
consistent with this Court's Standing Order.



1        163. Comcast thereafter analyzed Entropic's allegations of infringement and  
2 has indeed engaged in substantive discussions with Entropic related to Entropic's  
3 infringement allegations.

4        164. Indeed, after Entropic's Complaint was filed, on information and belief,  
5 Comcast again sought indemnification from its suppliers for Entropic's claims.

6        165. Thus, Comcast was on notice of the basis for Entropic's infringement  
7 claims and sought protection for those claims from its suppliers. On information and  
8 belief, Comcast could not have stated grounds for indemnification by specific  
9 suppliers unless it had knowledge of the basis for Entropic's infringement claims, as  
10 well as the specific products that were being accused.

11        166. Thus, Comcast has been aware that it infringed Patents-in-Suit since the  
12 service of Entropic's original Complaint, on February 16, 2023.

13        **2. First Amended Complaint**

14        167. Before the filing of this Second Amended Complaint, on June 5, 2023,  
15 Comcast was served with Entropic's First Amended Complaint alleging infringement  
16 of the same Patents-in-Suit. See DE 67. Entropic hereby incorporates its First  
17 Amended Complaint into this Second Amended Complaint by reference.

18        168. Even more so than its original Complaint, Entropic's First Amended  
19 Complaint set forth specific allegations of Comcast's infringement of each of the  
20 Patents-in-Suit. Entropic included reference to particular patents that Comcast  
21 willfully infringed based on its use of particular technology.

22        169. Comcast thereafter analyzed Entropic's allegations of infringement and  
23 has indeed engaged in substantive discussions with Entropic related to Entropic's  
24 infringement allegations.

25        170. Thus, Comcast has been aware that it infringed Patents-in-Suit since the  
26 service of Entropic's original Complaint, on June 5, 2023.  
27  
28



1                   **3. Entropic's Infringement Contentions**

2                   171. Further, Entropic's infringement contentions, served on September 15,  
3 2023, provided Comcast with additional notice of infringement. Entropic hereby  
4 incorporates its infringement contentions into this Second Amended Complaint by  
5 reference.

6                   172. Entropic's infringement contentions set forth Entropic's infringement  
7 positions in detail, and they include charts setting forth how each Accused Product  
8 specifically infringed each Asserted Patent.

9                   173. In particular, Entropic identified how Comcast's development and use of  
10 a PMA system that generates and transacts D3.1 downstream (DS) profiles infringes  
11 upon Entropic's '682 Patent.

12                   174. Comcast thereafter analyzed the infringement contentions and has  
13 engaged in thorough discussions with Entropic regarding the substance of these  
14 contentions.

15                   175. Thus, Comcast has been aware that it infringed Patents-in-Suit since at  
16 least September 15, 2023.

17                   176. ~~111.~~ To date, Comcast has continued its wrongful and willful use of the  
18 Patents-in-Suit, and has further continued its attempts to shield itself from liability for  
19 its wrongful use thereof.

20                   177. Comcast's continued sale of the Accused Products despite its knowledge  
21 of the infringement set forth in Entropic's original Complaint, Second Amended  
22 Complaint, and Entropic's infringement contentions demonstrates its intent to willfully  
23 infringe the Patents-in-Suit.

24                   **4. MaxLinear's SDNY Counterclaim**

25                   178. On December 1, 2023, MaxLinear, Inc. filed a Counterclaim against  
26 Comcast, alleging that Comcast breached the nondisclosure agreement (the "NDA") it  
27 entered into with MaxLinear, Inc. and misappropriated MaxLinear, Inc.'s trade secrets.  
28



1 See Comcast Cable Communications Management, LLC, et al. v. MaxLinear, Inc.,  
2 Case No. 1:23-cv-04436-AKH, DE 88 (S.D.N.Y. Dec. 1, 2023). This Counterclaim is  
3 hereby incorporated into this Second Amended Complaint by reference.

4 179. In its Counterclaim, MaxLinear, Inc. alleges that Comcast intentionally,  
5 and in violation of the NDA, capitalized off of MaxLinear's breakthrough FDX  
6 technology by first convincing MaxLinear to disclose that technology to Comcast, and  
7 then by taking credit for technology and divulging the information it learned to  
8 MaxLinear's competitor.

9 180. Specifically, Comcast knowingly published aspects of MaxLinear's FDX  
10 amplifier design as its own through its employee, Richard Prodan; disclosed the  
11 amplifier design to MaxLinear's competitor; and paid the competitor to create a  
12 functionally identical amplifier for Comcast.

13 181. MaxLinear goes on to allege that, while Comcast has previously hid  
14 behind Section 7.3 of the VSA—an agreement which *Comcast itself*  
15 *drafted*—Comcast's knowing misappropriation of MaxLinear's FDX-amplifier trade  
16 secret technology has rendered this provision irrelevant.

17 5. [REDACTED]

18 182. [REDACTED]  
19 [REDACTED]  
20 [REDACTED]  
21 [REDACTED]  
22 [REDACTED]  
23 [REDACTED]  
24 [REDACTED]

#### MOCA® AND THE MOCA® STANDARDS

25 185. ~~112.~~ MoCA is an alliance of companies that operate in the field of  
26 technology associated with providing multimedia services, such as television  
27 operators, consumer electronics, manufacturers, semiconductor vendors, and original  
28



1 equipment manufacturers (OEMs). MoCA has developed and published a standard  
2 governing the operation of devices using existing coaxial cable.

3 186. ~~113.~~ By the year 2000, cable and satellite providers were facing the  
4 problem of distributing services as data between the various locations in a dwelling  
5 where desired by customers. This would require a full digital network, capable of  
6 communication between any node in the network, in any direction. Traditional  
7 computer networking such as Ethernet provided some of the functionality, but the  
8 cabling necessary for Ethernet or the like was (and is) very expensive to install.

9 187. ~~114.~~ At the time, millions of dwellings and businesses across the United  
10 States often already had existing coaxial cable (“coax”) deployed throughout the  
11 premises to provide traditional television programming services to various rooms.  
12 However, this cabling was not designed or envisaged as a two-way and point-to-point  
13 network, nor a network capable of carrying high speed digital data traffic. The coax  
14 was deployed as a “tree” topology which simply splits the signal coming from an  
15 external source (the cable or satellite feed) for distribution of video content to the  
16 various locations on the premises in the “downlink” direction only. Thus, it was  
17 impossible to simply use this existing cable to make the new point-to-point  
18 high-quality network connections between devices located on the premises desired by  
19 the cable and satellite providers.

20 188. ~~115.~~ Entropic Inc. tackled the problem and managed what was considered  
21 unlikely or impossible—to make a high-speed point-to-point digital communication  
22 network using existing coax installations. This required substantial inventive effort  
23 that is embodied by the Patents in suit. For example, one of the significant challenges  
24 faced by Entropic Inc. was the varying nature of the exact topology of existing  
25 on-premises coax infrastructure that a network architecture would have to handle. The  
26 topology and types of devices (such as passive or active splitters, their characteristics,  
27 etc.) greatly influence the environment for signals transferred from node to node.  
28



1           189. ~~116.~~ Entropic Inc. later founded an organization to standardize the  
2 networking architecture and promote its use. This became known as the Multimedia  
3 over Coax Alliance, or “MoCA.” That acronym has also come into common usage as  
4 the name given to the networking architecture itself—now embodied in the MoCA  
5 standards. The technology defined in the MoCA standards enables the point-to-point  
6 high-quality network so badly needed by cable and satellite providers. Crucially it also  
7 provides the operators the ability to deploy their services without the enormously  
8 costly effort of installing Ethernet or similar cabling to carry the data.

9           190. ~~117.~~ There have been several iterations of the MoCA standards, beginning  
10 with MoCA 1.0, which was ratified in 2006. Since 2006, MoCA has ratified  
11 subsequent versions of the MoCA standards, including MoCA 1.1 and MoCA 2.0.

12           191. ~~118.~~ The MoCA standards ensure network robustness along with inherent  
13 low packet error rate performance and very low latency that is relatively independent  
14 of network load. The logical network model of the MoCA network is significantly  
15 different from the underlying on-premises legacy coaxial network. For example, due to  
16 the effects of splitter jumping and reflections, the channel characteristics for a link  
17 between two MoCA nodes may be dramatically different from a link between any  
18 other two MoCA nodes.

19           192. ~~119.~~ **The Network Patents (the ’518 and ’249 Patents)** and the  
20 **OFDMA Patent (the ’0,566 Patent)** describe MoCA networks, including how data  
21 communicated via MoCA networks is modulated by full-mesh pre-equalization  
22 techniques known as Adaptive Constellation Multitone (ACMT), a form of OFDM  
23 modulation.

24           193. ~~120.~~ As described in the **Network Coordinator Patent (the ’7,566**  
25 **Patent)** and the **Node Admission Patents (the ’759 and ’802 Patents)**, a particular  
26 MoCA node, known as a Network Coordinator, controls the admission of nodes to the  
27 MoCA Network. The Network Coordinator sends out a variety of data packets using a  
28



1 modulation profile that all the MoCA nodes can receive. For broadcast and multicast  
2 transmissions, a broadcast bitloading profile can be calculated and used for each node  
3 receiving the transmissions in the MoCA network.

4 194. ~~121.~~ MoCA nodes use a modulation profile for every point-to-point link.  
5 A variety of probe messages are transmitted by the MoCA nodes and used to create  
6 modulation profiles, optimize performance, and allow for various calibration  
7 mechanisms. In order to maintain network performance as network conditions change,  
8 the MoCA standards define techniques to maintain optimized point-to-point and  
9 broadcast links between all of the MoCA nodes. The **Link Maintenance Patents (the**  
10 **'450 and '539 Patents)** describe link maintenance operations involving the processing  
11 of probe messages at regular intervals to recalculate parameters such as modulation  
12 profile and transmit power.

13 195. ~~122.~~ This MoCA network allows for devices (MoCA nodes) connected to  
14 a MoCA network to communicate data formatted in a variety of formats. **The Packet**  
15 **Aggregation Patent (the '910 Patent)**, for example, describes the communication of  
16 data packets in an Ethernet format, via the on-premises coaxial network without the  
17 need to deploy a separate physical network on the premises.

18 196. ~~123.~~ **The Clock Sync Patent (the '681 Patent)** describes the  
19 synchronization of the clocks of each MoCA node in the network with a master clock  
20 provided by the Network Coordinator as these transmissions are fully coordinated.

21 197. ~~124.~~ The MoCA standards and the **PQoS Flow Patents (the '213 and**  
22 **'422 Patents)** describe how particular MoCA nodes can request additional network  
23 resources and/or transmission opportunities. This allows the MoCA node to transfer  
24 data more quickly across the MoCA network by borrowing resources that have been  
25 scheduled to other MoCA nodes.

26 198. ~~125.~~ These technological developments enable users to avoid the  
27 significant costs associated with rewiring their home or business in order to deploy a  
28



1 number of devices throughout the premises. Further, these technological developments  
2 allow services requiring reliable, high-speed data and video communications to be  
3 provided to the user while utilizing the on-premises coaxial network already present in  
4 the user's home or business.

5 199. ~~126.~~ Entropic Inc. spearheaded MoCA, and its founders are the inventors  
6 of several patents that cover various mandatory aspects of the MoCA standards. In  
7 other words, by conforming to the MoCA standards, a product necessarily practices  
8 those patents, either by itself, as a part of a MoCA-compliant system, or in the method  
9 in which it operates.

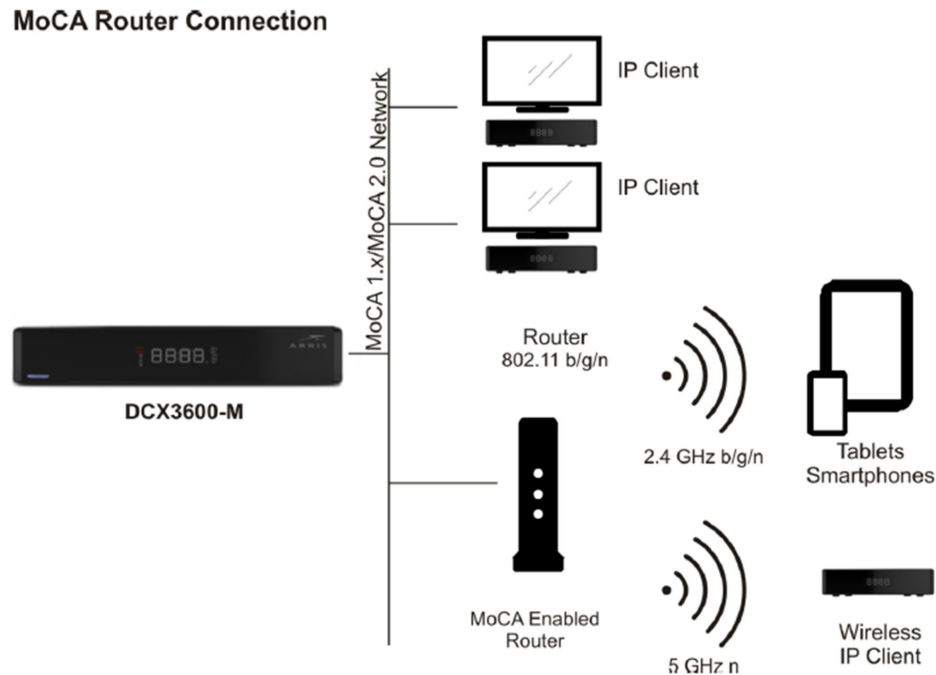
10 **THE ACCUSED MOCA INSTRUMENTALITIES AND**  
11 **ACCUSED SERVICES**

12 200. ~~127.~~ Comcast utilizes various instrumentalities, deployable as nodes in a  
13 MoCA-compliant coaxial cable network.

14 201. ~~128.~~ Comcast deploys the instrumentalities to, *inter alia*, provide a  
15 whole-premises DVR network over an on-premises coaxial cable network, with  
16 components including gateway devices (including, but not limited to, the XG1-A,  
17 XG1v3, XG1v4, XG2v2, and devices that operate in a similar matter) and client  
18 devices (including, but not limited to, the Arris DCX3200, Arris MR150CNM, Pace  
19 PR150BNM, Pace PX032ANI, Pace PXD01ANI, Samsung SR150BNM, and devices  
20 that operate in a similar manner) as nodes operating with data connections compliant  
21 with MoCA 1.0, 1.1, and/or 2.0. Such components are referred to herein as the  
22 "Accused MoCA Instrumentalities." The MoCA-compliant services offered by  
23 Comcast employing the Accused MoCA Instrumentalities, including the operation of a  
24 MoCA-compliant network in which such instrumentalities are deployed, are referred to  
25 herein as the "Accused Services."  
26  
27  
28



1        202. ~~129.~~ An exemplary illustration of the topology of various Accused  
2 MoCA Instrumentalities in a Comcast deployment is pictured below. <sup>911</sup>11



15

16        Figure 5 - A Typical Mixed MoCA/WiFi Home Network

17        203. ~~130.~~ Upon information and belief, the Accused MoCA Instrumentalities  
18 form networks over a coaxial cable network in accordance with MoCA 1.0, 1.1, and/or  
19 2.0.

20        204. ~~131.~~ Comcast's business includes the provision of Accused Services to its  
21 customers, by means of the Accused MoCA Instrumentalities.

22        205. ~~132.~~ Most commonly, the Accused Services are offered and provided in  
23 exchange for fees paid to Comcast.

24        206. ~~133.~~ Comcast itself also sometimes tests and demonstrates the Accused  
25 Services, by means of the Accused MoCA Instrumentalities.

26

27        <sup>911</sup>11 This is an example of the products used in the infringing network and is not  
28 intended to limit the scope of products accused of infringement.



1           207. ~~134.~~ In some deployments of the Accused MoCA Instrumentalities and  
2 the performance of the Accused Services, Comcast uses one or more of: the XG1-A,  
3 XG1v3, XG1v4, XG2v2, Arris DCX3200, Arris MR150CNM, Pace PR150BNM, Pace  
4 PX032ANI, Pace PXD01ANI, Samsung SR150BNM and similarly operating devices,  
5 to provide signals, programming and content utilizing a data connection carried over a  
6 coaxial cable network in accordance with the MoCA standards.

7           208. ~~135.~~ In October 2010, Chris Albano, in his capacity as Comcast's senior  
8 director/CPE and home networking stated, "The whole world is moving to MoCA. We  
9 at Comcast have made the decision that all new products will have MoCA embedded  
10 into them."<sup>4012</sup>

11           209. ~~136.~~ Upon information and belief, Mr. Albano and/or other authorized  
12 Comcast personnel authorized the publication and attribution of the preceding  
13 quotation to Mr. Albano.

14           210. ~~137.~~ Mr. Albano further stated in October 2010, in his capacity as  
15 Comcast's senior director/CPE and home networking that, "everyone is moving  
16 toward building MoCA in new devices. . . When you put MoCA (filters) in a home,  
17 you would be blocking MoCA energy and the home networking revolution."<sup>4113</sup>

18           211. ~~138.~~ Upon information and belief, Mr. Albano and/or other authorized  
19 Comcast personnel authorized the publication and attribution of the preceding  
20 quotation to Mr. Albano.

21  
22  
23  
24           <sup>4012</sup>  
<https://www.cablefax.com/archives/tech-workshops-home-networking-upstream-capacity-and-doing-the-splits>.

25  
26           <sup>4113</sup>  
27           <https://www.cablefax.com/archives/tech-workshops-home-networking-upstream-capacity-and-doing-the-splits>.



1           212. ~~139.~~ Comcast was aware of its deployment and use of MoCA at least as  
2 early as the later of its involvement with MoCA and six years prior to the filing of this  
3 complaint.

4           213. ~~140.~~ Upon information and belief, Comcast was aware that Entropic Inc.  
5 invented technology underlying the MoCA standards. Accordingly, such Entropic, Inc.  
6 technology would be incorporated into any instrumentality compliant with the MoCA  
7 standards.

8           214. ~~141.~~ Upon information and belief, Comcast and/or its subsidiaries was a  
9 member of MoCA beginning in 2010, which provided Comcast full access to all  
10 then-existing versions of the MoCA standards.

11           215. ~~142.~~ Upon information and belief, Comcast was aware that Entropic Inc.  
12 intended to and did pursue patent protection for technology related to MoCA, at least  
13 as early as the later of its involvement with MoCA and the issue date of the ~~Asserted~~  
14 ~~Patents~~Patents-in-Suit.

15           216. ~~143.~~ When Comcast obtained, deployed and/or used instrumentalities  
16 with MoCA functionality not provided by Entropic Inc., Comcast knew or should have  
17 known that Entropic Inc. had provided no authorization for such activities, for example  
18 by a patent license.

19           217. ~~144.~~ Upon information and belief, when Comcast obtained, deployed  
20 and/or used instrumentalities with MoCA functionality not provided by Entropic Inc.,  
21 Comcast failed to investigate whether Entropic Inc. authorized the use of Entropic  
22 Inc.'s patents for such activity.

23           218. ~~145.~~ Alternatively, upon information and belief, when Comcast obtained,  
24 deployed and/or used instrumentalities with MoCA functionality not provided by  
25 Entropic Inc., Comcast knew the use of Entropic Inc.'s patents for such activity was  
26 not authorized by Entropic Inc.  
27  
28



## JURISDICTION AND VENUE

219. ~~146.~~ This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a) because the claims herein arise under the patent laws of the United States, 35 U.S.C. § 1 *et seq.*, including 35 U.S.C. § 271.

220. ~~147.~~ Venue in this Judicial District is proper under 28 U.S.C. § 1400(b) because Comcast has regular and established places of business in this District. The defendants, by themselves and/or through their agents have committed acts of patent infringement within the State of California and in this Judicial District by making, importing, using, selling, offering for sale, and/or leasing the Accused MoCA Instrumentalities, as well as Accused Services employing the Accused MoCA Instrumentalities that comply with one or more of MoCA 1.0, 1.1, and/or 2.0.

221. ~~148.~~ This Court has general personal jurisdiction over Comcast Corp. because it conducts systematic and regular business within the State of California by, *inter alia*, providing cable television, internet, and phone services to businesses and residents throughout this State. Comcast Corp.'s website states that, "Comcast is deeply committed to California, where our nearly 5,000 employees serve more than 3 million customers throughout the state."<sup>~~142~~14</sup>

222. ~~149.~~ Upon information and belief, Comcast Management has a regular and established place of business in the State of California at 3055 Comcast Place, Livermore, California 94551.

223. ~~150.~~ The Court has personal jurisdiction over Comcast Corp., Comcast Communications, and Comcast Management because they have committed acts of infringement within the State of California and within this Judicial District through, for example, making infringing networks using the Accused MoCA Instrumentalities,

<sup>~~142~~14</sup> <https://california.comcast.com/about/#:%7E:text=Comcast%20is%20deeply%20committed%20to,smart%20home%E2%80%9D%20and%20phone%20service.>



1 and using the Accused MoCA Instrumentalities to provide the Accused Services in the  
2 State of California and this Judicial District.

3 224. ~~151.~~—Upon information and belief, Comcast Corp., Comcast  
4 Communications, and/or Comcast Management, by themselves and/or through their  
5 agents offer various telecommunication services throughout the United States.  
6 Comcast operates and maintains a nationwide television and data network through  
7 which it sells, leases, and offers products and services, including the Accused MoCA  
8 Instrumentalities, to businesses, consumers, and government agencies. Through its  
9 subsidiaries, Comcast Corp. offers to sell, sells, and provides “Comcast” and “Xfinity”  
10 branded products and services, including, set top boxes and digital video, audio, and  
11 other content services to customers. Subscribers to Comcast’s television services  
12 receive one or more receivers and/or set-top boxes, within this Judicial District.

13 225. ~~152.~~—Upon information and belief, the Accused Services are provided  
14 using the Accused MoCA Instrumentalities.

15 226. ~~153.~~—Upon information and belief, Comcast Corp., Comcast  
16 Communications, and/or Comcast Management, by themselves and/or through their  
17 agents Comcast Santa Maria and/or Comcast Lompoc operate their businesses through,  
18 *inter alia*, offices, warehouses, storefronts, and/or other operational locations within  
19 this Judicial District, including, for example, at the Xfinity by Comcast stores located  
20 in this Judicial District at 685 East Betteravia Rd., Santa Maria, California 93454; and  
21 1145 N. H Street, Suite B, Lompoc, California 93436. Comcast holds out these  
22 locations as its own through the use of branding on the locations themselves.

23 227. ~~154.~~—Comcast lists these Xfinity by Comcast stores on its website and  
24 holds them out as places where customers can obtain the Accused MoCA  
25 Instrumentalities.

26 228. ~~155.~~—Upon information and belief, one or more of the defendants own  
27 and/or leases the premises where these Xfinity by Comcast stores are located.  
28



1           229. ~~156.~~ Upon information and belief, these Xfinity by Comcast stores are  
2           staffed by persons directly employed by Comcast, many of whom live in this Judicial  
3           District.

4           230. ~~157.~~ Upon information and belief, one or more of the defendants has  
5           engaged in regular and established business at physical places within this Judicial  
6           District such as at these two Xfinity by Comcast stores.

7           231. ~~158.~~ Upon information and belief, Comcast employs and/or contracts with  
8           persons and directs them to install, service, repair, and/or replace equipment, as  
9           appropriate, in this Judicial District.

10          232. ~~159.~~ Upon information and belief, in each of these stores and/or service  
11          centers, Comcast owns and stores the Accused MoCA Instrumentalities and  
12          demonstrates the Accused Services provided via those products to Comcast customers.

13          233. ~~160.~~ Comcast has adopted and ratified the Comcast and Xfinity-branded  
14          locations identified in this Judicial District. The Comcast website advertises Comcast  
15          service packages available from Comcast-authorized retailers in this Judicial District,  
16          and prospective employees can find Comcast job listings in this Judicial District.  
17          Furthermore, the “corporate” section of Comcast’s main website has a section  
18          containing “Special Information Regarding California Residents’ Privacy Rights,”  
19          which demonstrates that Comcast is purposefully holding itself out as providing  
20          products and services in California.

21          234. ~~161.~~ Upon information and belief, Comcast Corp., and/or Comcast  
22          Communications, collectively, by themselves and/or through their agent Comcast  
23          Management provides the Accused Services throughout the United States and in this  
24          Judicial District.

25          235. ~~162.~~ Upon information and belief, Comcast Corp., and/or Comcast  
26          Management, collectively, by themselves, and/or through their agent, Comcast  
27          Communications sells, and offers for sale, and provides the Accused Services and the  
28



1 Accused MoCA Instrumentalities throughout the United States and in this Judicial  
2 District.

3 236. ~~163.~~ The Accused Services are available for subscription from various  
4 physical stores, including those at 685 East Betteravia Rd., Santa Maria, California  
5 93454; and 1145 N. H Street, Suite B, Lompoc, California 93436.

6 237. ~~164.~~ The Accused MoCA Instrumentalities, provided by Comcast to  
7 supply the Accused Services are provided to customers in this Judicial District and  
8 may be obtained by customers from physical locations in this District, including those  
9 at 685 East Betteravia Rd., Santa Maria, California 93454; and 1145 N. H Street, Suite  
10 B, Lompoc, California 93436.

11 238. ~~165.~~ Venue is further proper because Comcast has committed and  
12 continues to commit acts of patent infringement in this Judicial District, including,  
13 making, using, importing, offering to sell, and/or selling Accused Services and  
14 Accused MoCA Instrumentalities, and MoCA networks, and thereafter providing  
15 Accused Services in this Judicial District, including by Internet sales and sales via  
16 retail and wholesale stores. Furthermore, for example, Comcast deploys Accused  
17 MoCA Instrumentalities to many thousands of locations (customer premises) in this  
18 Judicial District and subsequently, by means of those Accused MoCA  
19 Instrumentalities, uses the claimed inventions at those locations in this Judicial  
20 District. Comcast infringes by inducing and contributing to acts of patent infringement  
21 in this Judicial District and/or committing at least a portion of any other infringements  
22 alleged herein in this Judicial District.

23 239. ~~166.~~ Comcast continues to conduct business in this Judicial District,  
24 including the acts and activities described in the preceding paragraph.  
25  
26  
27  
28



**COUNT I**

**(Infringement of the '518 Patent)**

240. ~~167.~~ Entropic incorporates by reference each allegation of the paragraphs above as if fully set forth herein.

241. ~~168.~~ The '518 Patent duly issued on November 13, 2007 from an application filed December 18, 2002, an application filed August 29, 2002 and, *inter alia*, a provisional application filed August 30, 2001.

242. ~~169.~~ Entropic owns all substantial rights, interest, and title in and to the '518 Patent, including the sole and exclusive right to prosecute this action and enforce the '518 Patent against infringers, and to collect damages for all relevant times.

243. ~~170.~~ The '518 Patent is one of the Network Patents, and is generally directed to, *inter alia*, broadband local area data networks using on-premises coaxial cable wiring for interconnection of devices. Probe messages can be "sent between devices to characterize the communication channel and determine optimum bit loading" for communicating data between devices. '518 Patent, Abstract. The '518 Patent has four claims, of which claims 1 and 4 are independent. At least these claims of the '518 Patent are directed to the creation of the MoCA network using the on-premises coaxial cable wiring. A true and accurate copy of the '518 Patent is attached hereto as Exhibit A.

244. ~~171.~~ The '518 Patent is directed to patent-eligible subject matter pursuant to 35 U.S.C. § 101.

245. ~~172.~~ The '518 Patent is valid and enforceable, and presumed as such, pursuant to 35 U.S.C. § 282.

246. ~~173.~~ Comcast deploys one or more of the Accused MoCA Instrumentalities (e.g. XG1-A, XG1v3, XG1v4, XG2v2, and Arris DCX3200, Arris MR150CNM, Pace PR150BNM, Pace PX032ANI, Pace PXD01ANI, and/or Samsung



1 SR150BNM and similarly operating devices) in connection with operating and  
2 providing the Accused Services.

3 247. ~~174.~~ The Accused MoCA Instrumentalities deployed by Comcast to  
4 customer premises remain the property of Comcast while deployed.

5 248. ~~175.~~ The Accused MoCA Instrumentalities operate while deployed in a  
6 manner controlled and intended by Comcast.

7 249. ~~176.~~ As set forth in the infringement contentions that were served on  
8 Comcast on September 29, 2023 (attached ~~non-limiting claim chart~~ (hereto as Exhibit  
9 B),<sup>15</sup> any product or system operating in a MoCA network compliant with the charted  
10 provisions of MoCA 1.0, 1.1, and/or 2.0 necessarily infringes at least claim 1 of the  
11 '518 Patent.

12 250. ~~177.~~ Each aspect of the functioning of the Accused MoCA  
13 Instrumentalities described in the claim chart operates while deployed to customer  
14 premises in a manner controlled and intended by Comcast.

15 251. ~~178.~~ Comcast provides no software, support or other facility to customers  
16 to modify any aspect of the functioning described in the claim chart of the Accused  
17 MoCA Instrumentalities while deployed to customer premises.

18 252. ~~179.~~ The Accused MoCA Instrumentalities are compliant with the  
19 provisions of MoCA 1.0, 1.1., and/or 2.0, as described in the '518 Patent claim chart,  
20 Exhibit B.

21 253. ~~180.~~ Comcast therefore directly infringes at least claim 1 of the '518  
22 Patent by using the Accused MoCA Instrumentalities to provide Accused Services to  
23 customers.

24  
25  
26  
27 <sup>15</sup> The prior claim chart for this patent can be found at DE 67.  
28



1           254. ~~181.~~ Comcast directly infringes at least claim 1 of the '518 Patent when it,  
2 for example, uses the Accused MoCA Instrumentalities to test, demonstrate or  
3 otherwise provide Accused Services.

4           255. ~~182.~~ Comcast directly infringes at least claim 1 of the '518 Patent by  
5 making, importing, selling, and/or offering for sale the Accused MoCA  
6 Instrumentalities in connection with providing the Accused Services over an  
7 on-premises coaxial cable network, which meets each and every limitation of at least  
8 claim 1 of the '518 Patent.

9           256. [REDACTED]  
10 [REDACTED]  
11 [REDACTED]  
12 [REDACTED]

13           257. Comcast has known of or has been willfully blind to the '518 Patent since  
14 its filing, given that this patent was filed during the time that MoCA was being  
15 developed and Comcast was intimately aware of the technology needed to comply with  
16 the MoCA standard that was being created.

17           258. Comcast has known of or has been willfully blind to the '518 Patent since  
18 before, and no later than the date of, its acceptance of service of the original Complaint  
19 in this action on February 16, 2023.

20           259. Comcast has known of or has been willfully blind to the '518 Patent since  
21 before, and no later than the date of, its acceptance of service of the First Amended  
22 Complaint in this action on June 5, 2023.

23           260. Comcast has known of or has been willfully blind to the '518 Patent since  
24 before, and no later than the date of, its acceptance of service of Entropic's  
25 infringement contentions on September 29, 2023.  
26  
27  
28



1           261. ~~183.~~ Comcast has known of or has been willfully blind to the '518 Patent  
2 since before, and no later than the date of, its receipt of the August 9, 2022  
3 communications from Entropic.

4           262. ~~184.~~ Comcast has been aware that it infringes the '518 Patent since at  
5 least as early as receipt of Entropic's communications sent to Comcast on August 9,  
6 2022.

7           263. ~~185.~~ Comcast has known of or has been willfully blind to the '518 Patent  
8 since at least the day before [REDACTED]

9           264. Comcast has known of or has been willfully blind to the '518 Patent since  
10 at least October 28, 2008, when Anton Monk provided notice of the '518 Patent to the  
11 MoCA Board of Directors.

12           265. ~~186.~~ Comcast has known of or has been willfully blind to the '518 Patent  
13 since at least the day before investing in Entropic Inc. in or about 2006.

14           266. ~~187.~~ The '518 Patent issued while or before Comcast was a member of  
15 MoCA.

16           267. ~~188.~~ Because of Comcast's knowledge of Entropic Inc.'s work and  
17 contributions related to MoCA technology, Comcast had knowledge of the '518 Patent  
18 before August 9, 2022 or was willfully blind to its existence.

19           268. ~~189.~~ The claims of the '518 Patent are essential to practicing at least  
20 MoCA standards versions 1.0, 1.1, and/or 2.0.

21           269. ~~190.~~ Comcast knew, or was willfully blind to the fact that the technology  
22 of the '518 Patent directly relates to networking over coaxial cable, including MoCA,  
23 at least as early as Comcast became aware of the existence of the '518 Patent. Because  
24 of its familiarity with, and access to, the MoCA standards, Comcast knew, or was  
25 willfully blind to the fact, that use (by Comcast or its customers) of instrumentalities  
26 compliant with MoCA 1.0, 1.1, and/or 2.0 to deliver Comcast services would  
27 necessarily infringe one or more claims of the '518 Patent.  
28



1           270. ~~191.~~ Since learning of the '518 Patent and its infringing activities,  
2 Comcast has failed to cease its infringing activities.

3           271. ~~192.~~ Comcast's customers and subscribers directly infringe at least claim  
4 1 of the '518 Patent by using the Accused MoCA Instrumentalities in connection with  
5 the Accused Services provided by Comcast.

6           272. ~~193.~~ Comcast actively induces its customers' and subscribers' direct  
7 infringement by providing the Accused Services and associated support.

8           273. ~~194.~~ For example, Comcast actively induces infringement of at least claim  
9 1 of the '518 Patent by providing the Accused MoCA Instrumentalities to Comcast  
10 customers with specific instructions and/or assistance (including installation and  
11 maintenance) regarding the instantiation of a MoCA network and the use of the  
12 Accused MoCA Instrumentalities in a manner that infringes the '518 Patent.

13           274. ~~195.~~ Comcast aids, instructs, supports, and otherwise acts with, the intent  
14 to cause an end user to make and/or use the MoCA network and/or use the Accused  
15 MoCA Instrumentalities in a manner that infringes each and every element of at least  
16 claim 1 of the '518 Patent.

17           275. ~~196.~~ Additionally, Comcast contributes to the customers' and subscribers'  
18 direct infringement. Comcast provides at least the Accused MoCA Instrumentalities  
19 that create and are at least substantially all of a MoCA network to be used to infringe  
20 at least claim 1 of the '518 Patent.

21           276. ~~197.~~ The Accused MoCA Instrumentalities have no substantial  
22 noninfringing uses. When an end user uses the Accused MoCA Instrumentalities in  
23 connection with the Accused Services provided by Comcast, the end user necessarily  
24 directly infringes at least claim 1 of the '518 Patent. The Accused MoCA  
25 Instrumentalities are therefore especially made or especially adapted for use in an  
26 infringing manner.



1           277. ~~198.~~ Comcast's inducement of, and contribution to, the direct  
2 infringement of at least claim 1 of the '518 Patent has been, and is, continuous and  
3 ongoing through the acts described above in connection with Comcast's provision of  
4 the Accused Services.

5           278. ~~199.~~ Comcast's infringement of the '518 Patent is, has been, and  
6 continues to be willful, intentional, deliberate, and/or in conscious disregard for  
7 Entropic's rights under the patent.

8           279. ~~200.~~ Entropic has been damaged as a result of the infringing conduct  
9 alleged above. Comcast is liable to Entropic in an amount that compensates Entropic  
10 for Comcast's infringement, which by law cannot be less than a reasonable royalty,  
11 together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

12           280. ~~201.~~ Upon information and belief, there is no duty to mark any  
13 instrumentality with the '518 Patent in accordance with 35 U.S.C. § 287.

## 14                                   COUNT II

### 15                                   (Infringement of the '249 Patent)

16           281. ~~202.~~ Entropic incorporates by reference each allegation of the paragraphs  
17 above as if fully set forth herein.

18           282. ~~203.~~ The '249 Patent duly issued on September 22, 2009 from an  
19 application filed July 21, 2001, and a provisional application filed May 4, 2001.

20           283. ~~204.~~ Entropic owns all substantial rights, interest, and title in and to the  
21 '249 Patent, including the sole and exclusive right to prosecute this action and enforce  
22 the '249 Patent against infringers, and to collect damages for all relevant times.

23           284. ~~205.~~ The '249 Patent is one of the Network Patents, and is generally  
24 directed to, *inter alia*, broadband cable networks that allow devices to communicate  
25 directly over the existing coaxial cable with its current architecture without the need to  
26 modify the existing cable infrastructure. Each device communicates with the other  
27 devices in the network and establishes parameters to overcome channel impairments in  
28



1 the coaxial cable network. '249 Patent, col. 3, lines 11–22. The '249 Patent has 17  
2 claims, of which claims 1, 5, and 10 are independent. At least these claims of the '249  
3 Patent are directed to the creation of the MoCA network using the on-premises coaxial  
4 cable wiring. A true and accurate copy of the '249 Patent is attached hereto as Exhibit  
5 C.

6 285. ~~206.~~ The '249 Patent is directed to patent-eligible subject matter pursuant  
7 to 35 U.S.C. § 101.

8 286. ~~207.~~ The '249 Patent is valid and enforceable, and presumed as such,  
9 pursuant to 35 U.S.C. § 282.

10 287. ~~208.~~ Comcast deploys one or more of the Accused MoCA  
11 Instrumentalities (e.g. XG1-A, XG1v3, XG1v4, XG2v2, and Arris DCX3200, Arris  
12 MR150CNM, Pace PR150BNM, Pace PX032ANI, Pace PXD01ANI, and/or Samsung  
13 SR150BNM and similarly operating devices) in connection with operating and  
14 providing the Accused Services.

15 288. ~~209.~~ The Accused MoCA Instrumentalities deployed by Comcast to  
16 customer premises remain the property of Comcast while deployed.

17 289. ~~210.~~ The Accused MoCA Instrumentalities operate while deployed in a  
18 manner controlled and intended by Comcast.

19 290. ~~211.~~ As set forth in the infringement contentions that were served on  
20 Comcast on September 29, 2023 (attached ~~non-limiting claim chart~~ (hereto as Exhibit  
21 D),<sup>16</sup> any product or system operating in a MoCA network compliant with the charted  
22 provisions of MoCA 1.0, 1.1, and/or 2.0 necessarily infringes at least claim 10 of the  
23 '249 Patent.

24  
25  
26  
27 <sup>16</sup> The prior claim chart for this patent can be found at DE 67.  
28



1        291. ~~212.~~ Each aspect of the functioning of the Accused MoCA  
2 Instrumentalities described in the claim chart operates while deployed to customer  
3 premises in a manner controlled and intended by Comcast.

4        292. ~~213.~~ Comcast provides no software, support or other facility to customers  
5 to modify any aspect of the functioning described in the claim chart of the Accused  
6 MoCA Instrumentalities while deployed to customer premises.

7        293. ~~214.~~ The Accused MoCA Instrumentalities are compliant with MoCA 1.0,  
8 1.1., and/or 2.0, as described in the '249 Patent claim chart, Exhibit D.

9        294. ~~215.~~ Comcast therefore directly infringes at least claim 10 of the '249  
10 Patent by using the Accused MoCA Instrumentalities to provide Accused Services to  
11 customers.

12        295. ~~216.~~ Comcast directly infringes at least claim 10 of the '249 Patent when  
13 it, for example, uses the Accused MoCA Instrumentalities to test, demonstrate or  
14 otherwise provide Accused Services.

15        296. ~~217.~~ Comcast directly infringes at least claim 10 of the '249 Patent by  
16 making, importing, selling, and/or offering for sale the Accused MoCA  
17 Instrumentalities in connection with providing the Accused Services over an  
18 on-premises coaxial cable network, which meets each and every limitation of at least  
19 claim 10 of the '249 Patent.

20        297. [REDACTED]  
21 [REDACTED]  
22 [REDACTED]  
23 [REDACTED]

24        298. Comcast has known of or has been willfully blind to the '249 Patent since  
25 its filing, given that this patent was filed during the time that MoCA was being  
26 developed and Comcast was intimately aware of the technology needed to comply with  
27 the MoCA standard that was being created.  
28



1           299. Comcast has known of or has been willfully blind to the '249 Patent since  
2 before, and no later than the date of, its acceptance of service of the original Complaint  
3 in this action on February 16, 2023.

4           300. Comcast has known of or has been willfully blind to the '249 Patent since  
5 before, and no later than the date of, its acceptance of service of the First Amended  
6 Complaint in this action on June 5, 2023.

7           301. Comcast has known of or has been willfully blind to the '249 Patent since  
8 before, and no later than the date of, its acceptance of service of Entropic's  
9 infringement contentions on September 29, 2023.

10           302. ~~218.~~ Comcast has known of or has been willfully blind to the '249 Patent  
11 since before, and no later than the date of, its receipt of the August 9, 2022  
12 communications from Entropic.

13           303. ~~219.~~ Comcast has been aware that it infringes the '249 Patent no later than  
14 its receipt of Entropic's communications sent to Comcast on August 9, 2022.

15           304. ~~220.~~ Comcast has known of or has been willfully blind to the '249 Patent  
16 since at least the day before [REDACTED]

17           305. ~~221.~~ Comcast has known of or has been willfully blind to the '249 Patent  
18 since at least the day before investing in Entropic in or about 2006.

19           306. ~~222.~~ The '249 Patent issued while or before Comcast was a member of  
20 MoCA.

21           307. ~~223.~~ Because of Comcast's knowledge of Entropic Inc.'s work and  
22 contributions related to MoCA technology, Comcast had knowledge of the '249 Patent  
23 before August 9, 2022 or was willfully blind to its existence.

24           308. ~~224.~~ The claims of the '249 Patent are essential to practicing at least  
25 MoCA standards versions 1.0, 1.1, and/or 2.0.

26           309. ~~225.~~ Comcast knew, or was willfully blind to the fact that the technology  
27 of the '249 Patent directly relates to networking over coaxial cable, including MoCA,  
28



1 at least as early as Comcast became aware of the existence of the '249 Patent. Because  
2 of its familiarity with, and access to, the MoCA standards, Comcast knew, or was  
3 willfully blind to the fact, that use (by Comcast or its customers) of instrumentalities  
4 compliant with MoCA 1.0, 1.1, and/or 2.0 to deliver Comcast services would  
5 necessarily infringe one or more claims of the '249 Patent.

6 310. ~~226.~~ Since learning of the '249 Patent and its infringing activities,  
7 Comcast has failed to cease its infringing activities.

8 311. ~~227.~~ Comcast's customers and subscribers directly infringe at least claim  
9 10 of the '249 Patent by using the Accused MoCA Instrumentalities in connection with  
10 the Accused Services provided by Comcast.

11 312. ~~228.~~ Comcast actively induces its customers' and subscribers' direct  
12 infringement by providing the Accused Services and associated support.

13 313. ~~229.~~ For example, Comcast actively induces infringement of at least claim  
14 10 of the '249 Patent by providing the Accused MoCA Instrumentalities to Comcast  
15 customers with specific instructions and/or assistance (including installation and  
16 maintenance) regarding the instantiation of a MoCA network and the use of the  
17 Accused MoCA Instrumentalities in a manner that infringes the '249 Patent.

18 314. ~~230.~~ Comcast aids, instructs, supports, and otherwise acts with the intent  
19 to cause an end user to make and/or use the MoCA network and/or use the Accused  
20 MoCA Instrumentalities in a manner that infringes every element of at least claim 10  
21 of the '249 Patent.

22 315. ~~231.~~ Additionally, Comcast contributes to the customers' and subscribers'  
23 direct infringement. Comcast provides at least the Accused MoCA Instrumentalities  
24 that create and are at least substantially all of a MoCA network to be used to infringe  
25 at least claim 10 of the '249 Patent.

26 316. ~~232.~~ The Accused MoCA Instrumentalities have no substantial  
27 noninfringing uses. When an end user uses the Accused MoCA Instrumentalities in  
28



1 connection with the Accused Services provided by Comcast, the end user necessarily  
2 directly infringes at least claim 10 of the '249 Patent. The Accused MoCA  
3 Instrumentalities are therefore especially made or especially adapted for use in an  
4 infringing manner.

5 317. ~~233.~~—Comcast's inducement of, and contribution to, the direct  
6 infringement of at least claim 10 of the '249 Patent has been, and is, continuous and  
7 ongoing through the acts described above in connection with Comcast's provision of  
8 the Accused Services.

9 318. ~~234.~~—Comcast's infringement of the '249 Patent is, has been, and  
10 continues to be willful, intentional, deliberate, and/or in conscious disregard for  
11 Entropic's rights under the patent.

12 319. ~~235.~~—Entropic has been damaged as a result of the infringing conduct  
13 alleged above. Comcast is liable to Entropic in an amount that compensates Entropic  
14 for Comcast's infringement, which by law cannot be less than a reasonable royalty,  
15 together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

16 320. ~~236.~~—Entropic is aware of no obligation to mark any instrumentality with  
17 the '249 Patent in accordance with 35 U.S.C. § 287.

### 18 COUNT III

#### 19 **(Infringement of the '759 Patent)**

20 321. ~~237.~~—Entropic incorporates by reference each allegation of the paragraphs  
21 above as if fully set forth herein.

22 322. ~~238.~~—The '759 Patent duly issued on February 15, 2011 from an  
23 application filed July 12, 2004, an application filed August 29, 2002, and, *inter alia* a  
24 provisional application filed August 30, 2001.

25 323. ~~239.~~—Entropic owns all substantial rights, interest, and title in and to the  
26 '759 Patent, including the sole and exclusive right to prosecute this action and enforce  
27 the '759 Patent against infringers, and to collect damages for all relevant times.  
28



1           324. ~~240.~~ The '759 Patent is one of the Node Admission Patents, and is  
2 generally directed to, *inter alia*, broadband cable networks that allow devices to  
3 communicate directly over the existing coaxial cable with its current architecture  
4 without the need to modify the existing cable infrastructure. Each device  
5 communicates with the other devices in the network and establishes a common  
6 modulation scheme between the devices in the network. '759 Patent, Abstract. The  
7 '759 Patent has 22 claims, of which claims 1–7, 14, 20–22 are independent. At least  
8 these claims of the '759 Patent are directed to a variety of techniques for establishing a  
9 modulation scheme for communications between nodes in the MoCA network. A true  
10 and correct copy of the '759 Patent is attached hereto as Exhibit E.

11           325. ~~241.~~ The '759 Patent is directed to patent-eligible subject matter pursuant  
12 to 35 U.S.C. § 101.

13           326. ~~242.~~ The '759 Patent is valid and enforceable, and presumed as such,  
14 pursuant to 35 U.S.C. § 282.

15           327. ~~243.~~ Comcast deploys one or more of the Accused MoCA  
16 Instrumentalities (e.g. XG1-A, XG1v3, XG1v4, XG2v2, and Arris DCX3200, Arris  
17 MR150CNM, Pace PR150BNM, Pace PX032ANI, Pace PXD01ANI, and/or Samsung  
18 SR150BNM and similarly operating devices) in connection with operating and  
19 providing the Accused Services.

20           328. ~~244.~~ The Accused MoCA Instrumentalities deployed by Comcast to  
21 customer premises remain the property of Comcast while deployed.

22           329. ~~245.~~ The Accused MoCA Instrumentalities operate while deployed in a  
23 manner controlled and intended by Comcast.

24           330. ~~246.~~ As set forth in the infringement contentions that were served on  
25 Comcast on September 29, 2023 (attached ~~non-limiting claim chart~~ hereto as Exhibit  
26  
27  
28



1 F),<sup>17</sup> any product or system operating in a MoCA network compliant with the charted  
2 provisions of MoCA 1.0, 1.1, and/or 2.0 necessarily infringes at least claim 2 of the  
3 '759 Patent.

4 331. ~~247.~~—Each aspect of the functioning of the Accused MoCA  
5 Instrumentalities described in the claim chart operates while deployed to customer  
6 premises in a manner controlled and intended by Comcast.

7 332. ~~248.~~—Comcast provides no software, support or other facility to customers  
8 to modify any aspect of the functioning described in the claim chart of the Accused  
9 MoCA Instrumentalities while deployed to customer premises.

10 333. ~~249.~~—The Accused MoCA Instrumentalities are compliant with MoCA 1.0,  
11 1.1, and/or 2.0, as described in the '759 Patent claim chart, Exhibit F.

12 334. ~~250.~~—Comcast therefore directly infringes at least claim 2 of the '759  
13 Patent by using the Accused MoCA Instrumentalities to provide Accused Services to  
14 customers.

15 335. ~~251.~~—Comcast sells the Accused Services to its customers and subscribers  
16 for a fee. Pursuant to the sale of these services, Comcast uses the method recited in at  
17 least claim 2 of the '759 Patent to provide the Accused Services to Comcast's  
18 customers and subscribers through the Accused MoCA Instrumentalities. Comcast is  
19 therefore engaging in the infringing use of at least claim 2 of the '759 Patent in order  
20 to generate revenue from its customers and subscribers.

21 336. ~~252.~~—Comcast directly infringes at least claim 2 of the '759 Patent when it,  
22 for example, uses the Accused MoCA Instrumentalities to test, demonstrate or  
23 otherwise provide Accused Services.

24 337. [REDACTED]  
25 [REDACTED]  
26 [REDACTED]

27 <sup>17</sup> The prior claim chart for this patent can be found at DE 67.  
28



1 [REDACTED]  
2 [REDACTED]  
3 338. Comcast has known of or has been willfully blind to the '759 Patent since  
4 its filing, given that this patent was filed during the time that MoCA was being  
5 developed and Comcast was intimately aware of the technology needed to comply with  
6 the MoCA standard that was being created.

7 339. Comcast has known of or has been willfully blind to the '759 Patent since  
8 before, and no later than the date of, its acceptance of service of the original Complaint  
9 in this action on February 16, 2023.

10 340. Comcast has known of or has been willfully blind to the '759 Patent since  
11 before, and no later than the date of, its acceptance of service of the First Amended  
12 Complaint in this action on June 5, 2023.

13 341. Comcast has known of or has been willfully blind to the '759 Patent since  
14 before, and no later than the date of, its acceptance of service of Entropic's  
15 infringement contentions on September 29, 2023.

16 342. ~~253.~~ Comcast has known of or has been willfully blind to the '759 Patent  
17 since before, and no later than the date of, its receipt of the August 9, 2022  
18 communications from Entropic.

19 343. ~~254.~~ Comcast has been aware that it infringes the '759 Patent no later than  
20 its receipt of Entropic's communications sent to Comcast on August 9, 2022.

21 344. ~~255.~~ Comcast has known of or has been willfully blind to the '759 Patent  
22 since at least the day before [REDACTED]

23 345. Comcast has known of or has been willfully blind to the '759 Patent since  
24 at least October 28, 2008, when Anton Monk provided notice of the '518 Patent to the  
25 MoCA Board of Directors.



1           346. ~~256.~~ Comcast has known of or has been willfully blind to the '759 Patent  
2 since at least the day before investing in Entropic in or about 2006.The '759 Patent  
3 issued while or before Comcast was a member of MoCA.

4           ~~257. The '759 Patent issued while or before Comcast was a member of MoCA.~~

5           347. ~~258.~~ Because of Comcast's knowledge of Entropic Inc.'s work and  
6 contributions related to MoCA technology, Comcast had knowledge of the '759 Patent  
7 before August 9, 2022 or was willfully blind to its existence.

8           348. ~~259.~~ The claims of the '759 Patent are essential to practicing at least  
9 MoCA standards versions 1.0, 1.1, and/or 2.0.

10           349. ~~260.~~ Comcast knew, or was willfully blind to the fact that the technology  
11 of the '759 Patent directly relates to networking over coaxial cable, including MoCA,  
12 at least as early as Comcast became aware of the existence of the '759 Patent. Because  
13 of its familiarity with, and access to, the MoCA standards, Comcast knew, or was  
14 willfully blind to the fact, that use (by Comcast or its customers) of instrumentalities  
15 compliant with MoCA 1.0, 1.1, and/or 2.0 to deliver Comcast services would  
16 necessarily infringe one or more claims of the '759 Patent.

17           350. ~~261.~~ Since learning of the '759 Patent and its infringing activities,  
18 Comcast has failed to cease its infringing activities.

19           351. ~~262.~~ Comcast's customers and subscribers directly infringe at least claim  
20 2 of the '759 Patent by using the Accused MoCA Instrumentalities in connection with  
21 the Accused Services provided by Comcast.

22           352. ~~263.~~ Comcast actively induces its customers' and subscribers' direct  
23 infringement by providing the Accused Services and associated support.

24           353. ~~264.~~ For example, Comcast actively induces infringement of at least claim  
25 2 of the '759 Patent by providing the Accused MoCA Instrumentalities to Comcast  
26 customers with specific instructions and/or assistance (including installation and  
27



1 maintenance) regarding the instantiation of a MoCA network and the use of the  
2 Accused MoCA Instrumentalities to infringe the '759 Patent.

3 354. ~~265.~~ Comcast aids, instructs, supports, and otherwise acts with the intent  
4 to cause an end user to make and/or use the MoCA network and/or use the Accused  
5 MoCA Instrumentalities to infringe every element of at least claim 2 of the '759  
6 Patent.

7 355. ~~266.~~ Additionally, Comcast contributes to the customers' and subscribers'  
8 direct infringement. Comcast provides at least the Accused MoCA Instrumentalities  
9 that create and are at least substantially all of a MoCA network to be used to infringe  
10 at least claim 2 of the '759 Patent.

11 356. ~~267.~~ The Accused MoCA Instrumentalities have no substantial  
12 noninfringing uses. When an end user uses the Accused MoCA Instrumentalities in  
13 connection with the Accused Services provided by Comcast, the end user necessarily  
14 directly infringes at least claim 2 of the '759 Patent. The Accused MoCA  
15 Instrumentalities are therefore especially made or especially adapted for use in an  
16 infringing manner.

17 357. ~~268.~~ Comcast's inducement of, and contribution to, the direct  
18 infringement of at least claim 2 of the '759 Patent has been, and is, continuous and  
19 ongoing through the acts described above in connection with Comcast's provision of  
20 the Accused Services.

21 358. ~~269.~~ Comcast's infringement of the '759 Patent is, has been, and  
22 continues to be willful, intentional, deliberate, and/or in conscious disregard for  
23 Entropic's rights under the patent.

24 359. ~~270.~~ Entropic has been damaged as a result of the infringing conduct  
25 alleged above. Comcast is liable to Entropic in an amount that compensates Entropic  
26 for Comcast's infringement, which by law cannot be less than a reasonable royalty,  
27 together with interest and costs as fixed by this Court under 35 U.S.C. § 284.  
28



360. ~~271.~~—Upon information and belief, there is no duty to mark any instrumentality with the '759 Patent in accordance with 35 U.S.C. § 287.

## COUNT IV

## (Infringement of the '802 Patent)

361. ~~272.~~ Entropic incorporates by reference each allegation of the paragraphs above as if fully set forth herein.

362. ~~273.~~—The '802 Patent duly issued on December 27, 2011 from an application filed December 2, 2005, and a provisional application filed December 2, 2004.

363. ~~274.~~ Entropic owns all substantial rights, interest, and title in and to the '802 Patent, including the sole and exclusive right to prosecute this action and enforce the '802 Patent against infringers, and to collect damages for all relevant times.

364. ~~275.~~—The '802 Patent is one of the Node Admission Patents, and is generally directed to, *inter alia*, broadband cable networks that allow devices to communicate directly over the existing coaxial cable with its current architecture without the need to modify the existing cable infrastructure. Each device communicates with the other devices in the network and establishes the best modulation and other transmission parameters that is optimized and periodically adapted to the channel between each pair of devices. '802 Patent, col. 4, lines 7–24. The '802 Patent has four claims, all of which are independent. At least these claims of the '802 Patent are directed to a variety of techniques for establishing a modulation scheme for communications between nodes in the MoCA network. A true and accurate copy of the '802 Patent is attached hereto as Exhibit G.

365. ~~276.~~ The '802 Patent is directed to patent-eligible subject matter pursuant to 35 U.S.C. § 101.

366. ~~277.~~ The '802 Patent is valid and enforceable, and presumed as such, pursuant to 35 U.S.C. § 282.



1           367. ~~278.~~ Comcast deploys one or more of the Accused MoCA  
2 Instrumentalities (e.g. XG1-A, XG1v3, XG1v4, XG2v2, and Arris DCX3200, Arris  
3 MR150CNM, Pace PR150BNM, Pace PX032ANI, Pace PXD01ANI, and/or Samsung  
4 SR150BNM and similarly operating devices) in connection with operating and  
5 providing the Accused Services.

6           368. ~~279.~~ The Accused MoCA Instrumentalities deployed by Comcast to  
7 customer premises remain the property of Comcast while deployed.

8           369. ~~280.~~ The Accused MoCA Instrumentalities operate while deployed in a  
9 manner controlled and intended by Comcast.

10           370. ~~281.~~ As set forth in the [infringement contentions that were served on](#)  
11 [Comcast on September 29, 2023](#) (attached ~~non-limiting claim chart~~ [\(hereto as Exhibit](#)  
12 [H\)](#),<sup>18</sup> any product or system operating in a MoCA network compliant with the charted  
13 provisions of MoCA 1.0, 1.1, and/or 2.0 necessarily infringes at least claim 3 of the  
14 '802 Patent.

15           371. ~~282.~~ Each aspect of the functioning of the Accused MoCA  
16 Instrumentalities described in the claim chart operates while deployed to customer  
17 premises in a manner controlled and intended by Comcast.

18           372. ~~283.~~ Comcast provides no software, support or other facility to customers  
19 to modify any aspect of the functioning described in the claim chart of the Accused  
20 MoCA Instrumentalities while deployed to customer premises.

21           373. ~~284.~~ The Accused MoCA Instrumentalities are compliant with MoCA 1.0,  
22 1.1, and/or 2.0, as described in the '802 Patent claim chart, Exhibit H.

23           374. ~~285.~~ Comcast therefore directly infringes at least claim 3 of the '802  
24 Patent by using the Accused MoCA Instrumentalities to provide Accused Services to  
25 customers.

26  
27 <sup>18</sup> [The prior claim chart for this patent can be found at DE 67.](#)  
28



1           375. ~~286.~~ Comcast sells the Accused Services to its customers and subscribers  
2 for a fee. Pursuant to the sale of these services, Comcast uses the method recited in at  
3 least claim 3 of the '802 Patent to provide the Accused Services to Comcast's  
4 customers and subscribers through the Accused MoCA Instrumentalities. Comcast is  
5 therefore engaging in the infringing use of at least claim 3 of the '802 Patent in order  
6 to generate revenue from its customers and subscribers.

7           376. ~~287.~~ Comcast directly infringes at least claim 3 of the '802 Patent when it,  
8 for example, uses the Accused MoCA Instrumentalities to test, demonstrate or  
9 otherwise provide Accused Services and/or the Accused MoCA Instrumentalities.

10          377. [REDACTED]  
11 [REDACTED]  
12 [REDACTED]  
13 [REDACTED]

14           378. Comcast has known of or has been willfully blind to the '802 Patent since  
15 its filing, given that this patent was filed during the time that MoCA was being  
16 developed and Comcast was intimately aware of the technology needed to comply with  
17 the MoCA standard that was being created.

18           379. Comcast has known of or has been willfully blind to the '802 Patent since  
19 before, and no later than the date of, its acceptance of service of the original Complaint  
20 in this action on February 16, 2023.

21           380. Comcast has known of or has been willfully blind to the '802 Patent since  
22 before, and no later than the date of, its acceptance of service of the First Amended  
23 Complaint in this action on June 5, 2023.

24           381. Comcast has known of or has been willfully blind to the '802 Patent since  
25 before, and no later than the date of, its acceptance of service of Entropic's  
26 infringement contentions on September 29, 2023.  
27  
28



1           382. ~~288.~~ Comcast has known of or has been willfully blind to the '802 Patent  
2 since at least the day before [REDACTED]

3           383. ~~289.~~ Comcast has been aware that it infringes the '802 Patent no later than  
4 its receipt of Entropic's communication sent to Comcast on August 9, 2022.

5           384. ~~290.~~ Comcast has known of or has been willfully blind to the '802 Patent  
6 since before, and no later than the date of, its receipt of the August 9, 2022  
7 communications from Entropic.

8           385. ~~291.~~ Comcast has known of or has been willfully blind to the '802 Patent  
9 since at least the day before investing in Entropic in or about 2006.

10           386. ~~292.~~ The '802 Patent issued while or before Comcast was a member of  
11 MoCA.

12           387. ~~293.~~ Because of Comcast's knowledge of Entropic Inc.'s work and  
13 contributions related to MoCA technology, Comcast had knowledge of the '802 Patent  
14 before August 9, 2022 or was willfully blind to its existence.

15           388. ~~294.~~ The claims of the '802 Patent are essential to practicing at least  
16 MoCA standards versions 1.0, 1.1, and/or 2.0.

17           389. ~~295.~~ Comcast knew, or was willfully blind to the fact that the technology  
18 of the '802 Patent directly relates to networking over coaxial cable, including MoCA,  
19 at least as early as Comcast became aware of the existence of the '802 Patent. Because  
20 of its familiarity with, and access to, the MoCA standards, Comcast knew, or was  
21 willfully blind to the fact, that use (by Comcast or its customers) of instrumentalities  
22 compliant with MoCA 1.0, 1.1, and/or 2.0 to deliver Comcast services would  
23 necessarily infringe one or more claims of the '802 Patent.

24           390. ~~296.~~ Since learning of the '802 Patent and its infringing activities,  
25 Comcast has failed to cease its infringing activities.  
26  
27  
28



1           391. ~~297.~~ Comcast's customers and subscribers directly infringe at least claim  
2 3 of the '802 Patent by using the Accused MoCA Instrumentalities in connection with  
3 the Accused Services provided by Comcast.

4           392. ~~298.~~ Comcast actively induces its customers' and subscribers' direct  
5 infringement by providing the Accused Services and associated support.

6           393. ~~299.~~ For example, Comcast actively induces infringement of at least claim  
7 3 of the '802 Patent by providing the Accused MoCA Instrumentalities to Comcast  
8 customers with specific instructions and/or assistance (including installation and  
9 maintenance) regarding the instantiation of a MoCA network and the use of the  
10 Accused MoCA Instrumentalities to infringe the '802 Patent.

11           394. ~~300.~~ Comcast aids, instructs, supports, and otherwise acts with the intent  
12 to cause an end user to make and/or use the MoCA network and/or use the Accused  
13 MoCA Instrumentalities to infringe every element of at least claim 3 of the '802  
14 Patent.

15           395. ~~301.~~ Additionally, Comcast contributes to the customers' and subscribers'  
16 direct infringement. Comcast provides at least the Accused MoCA Instrumentalities  
17 that create and are at least substantially all of a MoCA network to be used to infringe  
18 at least claim 3 of the '802 Patent.

19           396. ~~302.~~ The Accused MoCA Instrumentalities have no substantial  
20 noninfringing uses. When an end user uses the Accused MoCA Instrumentalities in  
21 connection with the Accused Services provided by Comcast, the end user necessarily  
22 directly infringes at least claim 3 of the '802 Patent. The Accused MoCA  
23 Instrumentalities are therefore especially made or especially adapted for use in an  
24 infringing manner.

25           397. ~~303.~~ Comcast's inducement of, and contribution to, the direct  
26 infringement of at least claim 3 of the '802 Patent has been, and is, continuous and  
27  
28



ongoing through the acts described above in connection with Comcast's provision of the Accused Services.

398. ~~304.~~ Comcast's infringement of the '802 Patent is, has been, and continues to be willful, intentional, deliberate, and/or in conscious disregard for Entropic's rights under the patent.

399. ~~305.~~ Entropic has been damaged as a result of the infringing conduct alleged above. Comcast is liable to Entropic in an amount that compensates Entropic for Comcast's infringement, which by law cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

400. ~~306.~~ Upon information and belief, there is no duty to mark any instrumentality with the '802 Patent in accordance with 35 U.S.C. § 287.

#### COUNT V

#### **(Infringement of the '450 Patent)**

401. ~~307.~~ Entropic incorporates by reference each allegation of the paragraphs above as if fully set forth herein.

402. ~~308.~~ The '450 Patent duly issued on January 14, 2014, from an application filed September 19, 2005 and, *inter alia*, a provisional application filed December 2, 2004.

403. ~~309.~~ Entropic owns all substantial rights, interest, and title in and to the '450 Patent, including the sole and exclusive right to prosecute this action and enforce the '450 Patent against infringers, and to collect damages for all relevant times.

404. ~~310.~~ The '450 Patent is one of the Link Maintenance Patents, and is generally directed to, *inter alia*, broadband cable networks that allow devices to communicate directly over the existing coaxial cable with its current architecture without the need to modify the existing cable infrastructure. Each device communicates with the other devices in the network and establishes a common modulation scheme between the devices in the network. '450 Patent, col. 4, lines



1 12-28. The '450 Patent has 38 claims, of which, claim 1, 8, 27, 29, and 34 are  
2 independent. At least these claims of the '450 Patent are directed to a variety of  
3 techniques for determining a common modulation scheme for communications  
4 between nodes in the MoCA network. A true and accurate copy of the '450 Patent is  
5 attached hereto as Exhibit I.

6 405. ~~311.~~ The '450 Patent is directed to patent-eligible subject matter pursuant  
7 to 35 U.S.C. § 101.

8 406. ~~312.~~ The '450 Patent is valid and enforceable, and presumed as such,  
9 pursuant to 35 U.S.C. § 282.

10 407. ~~313.~~ Comcast deploys one or more of the Accused MoCA  
11 Instrumentalities (e.g. XG1-A, XG1v3, XG1v4, XG2v2, and Arris DCX3200, Arris  
12 MR150CNM, Pace PR150BNM, Pace PX032ANI, Pace PXD01ANI, and/or Samsung  
13 SR150BNM and similarly operating devices) in connection with operating and  
14 providing the Accused Services.

15 408. ~~314.~~ The Accused MoCA Instrumentalities deployed by Comcast to  
16 customer premises remain the property of Comcast while deployed.

17 409. ~~315.~~ The Accused MoCA Instrumentalities operate while deployed in a  
18 manner controlled and intended by Comcast.

19 410. ~~316.~~ As set forth in the infringement contentions that were served on  
20 Comcast on September 29, 2023 (attached ~~non-limiting claim chart~~ (hereto as Exhibit  
21 J),<sup>19</sup> any product or system operating in a MoCA network compliant with the charted  
22 provisions of MoCA 1.0, 1.1, and/or 2.0 necessarily infringes at least claim 29 of the  
23 '450 Patent.

24  
25  
26  
27 <sup>19</sup> The prior claim chart for this patent can be found at DE 67.  
28



1           411. ~~317.~~—Each aspect of the functioning of the Accused MoCA  
2 Instrumentalities described in the claim chart operates while deployed to customer  
3 premises in a manner controlled and intended by Comcast.

4           412. ~~318.~~—Comcast provides no software, support or other facility to customers  
5 to modify any aspect of the functioning described in the claim chart of the Accused  
6 MoCA Instrumentalities while deployed to customer premises.

7           413. ~~319.~~—The Accused MoCA Instrumentalities are compliant with MoCA 1.0,  
8 1.1, and/or 2.0, as described in the '450 Patent claim chart, Exhibit J.

9           414. ~~320.~~—Comcast therefore directly infringes at least claim 29 of the '450  
10 Patent by using the Accused MoCA Instrumentalities to provide Accused Services to  
11 customers.

12           415. ~~321.~~—Comcast sells the Accused Services to its customers and subscribers  
13 for a fee. Pursuant to the sale of these services, Comcast uses the method recited in at  
14 least claim 29 of the '450 Patent to provide the Accused Services to Comcast's  
15 customers and subscribers through the Accused MoCA Instrumentalities. Comcast is  
16 therefore engaging in the infringing use of at least claim 29 of the '450 Patent in order  
17 to generate revenue from its customers and subscribers.

18           416. ~~322.~~—Comcast directly infringes at least claim 29 of the '450 Patent when  
19 it, for example, uses the Accused MoCA Instrumentalities to test, demonstrate or  
20 otherwise provide Accused Services.

21           417. [REDACTED]  
22 [REDACTED]  
23 [REDACTED]  
24 [REDACTED]

25           418. Comcast has known of or has been willfully blind to the '450 Patent since  
26 its filing, given that this patent was filed during the time that MoCA was being  
27



1 developed and Comcast was intimately aware of the technology needed to comply with  
2 the MoCA standard that was being created.

3 419. Comcast has known of or has been willfully blind to the '450 Patent since  
4 before, and no later than the date of, its acceptance of service of the original Complaint  
5 in this action on February 16, 2023.

6 420. Comcast has known of or has been willfully blind to the '450 Patent since  
7 before, and no later than the date of, its acceptance of service of the First Amended  
8 Complaint in this action on June 5, 2023.

9 421. Comcast has known of or has been willfully blind to the '450 Patent since  
10 before, and no later than the date of, its acceptance of service of Entropic's  
11 infringement contentions on September 29, 2023.

12 422. ~~323.~~ Comcast has known of or has been willfully blind to the '450 Patent  
13 since before, and no later than the date of, its receipt of the August 9, 2022  
14 communications from Entropic.

15 423. ~~324.~~ Comcast has been aware that it infringes the '450 Patent no later than  
16 its receipt of Entropic's communication sent to Comcast on August 9, 2022.

17 424. ~~325.~~ Comcast has known of or has been willfully blind to the '450 Patent  
18 since at least the day before [REDACTED]

19 425. ~~326.~~ Comcast has known of or has been willfully blind to the '450 Patent  
20 since at least the day before investing in Entropic in or about 2006.

21 426. ~~327.~~ The '450 Patent issued while or before Comcast was a member of  
22 MoCA.

23 427. ~~328.~~ Because of Comcast's knowledge of Entropic Inc.'s work and  
24 contributions related to MoCA technology, Comcast had knowledge of the '450 Patent  
25 before August 9, 2022 or was willfully blind to its existence.

26 428. ~~329.~~ The claims of the '450 Patent are essential to practicing at least  
27 MoCA standards versions 1.0, 1.1, and/or 2.0.



1           429. ~~330.~~ Comcast knew, or was willfully blind to the fact that the technology  
2 of the '450 Patent directly relates to networking over coaxial cable, including MoCA,  
3 at least as early as Comcast became aware of the existence of the '450 Patent. Because  
4 of its familiarity with, and access to, the MoCA standards, Comcast knew, or was  
5 willfully blind to the fact, that use (by Comcast or its customers) of instrumentalities  
6 compliant with MoCA 1.0, 1.1, and/or 2.0 to deliver Comcast services would  
7 necessarily infringe one or more claims of the '450 Patent.

8           430. ~~331.~~ Since learning of the '450 Patent and its infringing activities,  
9 Comcast has failed to cease its infringing activities.

10           431. ~~332.~~ Comcast's customers and subscribers directly infringe at least claim  
11 29 of the '450 Patent by using the Accused MoCA Instrumentalities in connection with  
12 the Accused Services provided by Comcast.

13           432. ~~333.~~ Comcast actively induces its customers' and subscribers' direct  
14 infringement by providing the Accused Services and associated support.

15           433. ~~334.~~ For example, Comcast actively induces infringement of at least claim  
16 29 of the '450 Patent by providing the Accused MoCA Instrumentalities to Comcast  
17 customers with specific instructions and/or assistance (including installation and  
18 maintenance) regarding the instantiation of a MoCA network and the use of the  
19 Accused MoCA Instrumentalities to infringe the '450 Patent.

20           434. ~~335.~~ Comcast aids, instructs, supports, and otherwise acts with the intent  
21 to cause an end user to make and/or use the MoCA network and/or use the Accused  
22 MoCA Instrumentalities to infringe every element of at least claim 29 of the '450  
23 Patent.

24           435. ~~336.~~ Additionally, Comcast contributes to the customers' and subscribers'  
25 direct infringement. Comcast provides at least the Accused MoCA Instrumentalities  
26 that create and are at least substantially all of a MoCA network to be used to infringe  
27 at least claim 29 of the '450 Patent.  
28



1           436. ~~337.~~—The Accused MoCA Instrumentalities have no substantial  
2 noninfringing uses. When an end user uses the Accused MoCA Instrumentalities in  
3 connection with the Accused Services provided by Comcast, the end user directly  
4 infringes at least claim 29 of the '450 Patent. The Accused MoCA Instrumentalities are  
5 especially made or especially adapted for use in an infringing manner.

6           437. ~~338.~~—Comcast's inducement of, and contribution to, the direct  
7 infringement of at least claim 29 of the '450 Patent has been, and is, continuous and  
8 ongoing through the acts described above in connection with Comcast's provision of  
9 the Accused Services.

10           438. ~~339.~~—Comcast's infringement of the '450 Patent is, has been, and  
11 continues to be willful, intentional, deliberate, and/or in conscious disregard for  
12 Entropic's rights under the patent.

13           439. ~~340.~~—Entropic has been damaged as a result of the infringing conduct  
14 alleged above. Comcast is liable to Entropic in an amount that compensates Entropic  
15 for Comcast's infringement, which by law cannot be less than a reasonable royalty,  
16 together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

17           440. ~~341.~~— Upon information and belief, there is no duty to mark any  
18 instrumentality with the '450 Patent in accordance with 35 U.S.C. § 287.

## 19                                   COUNT VI

### 20                                   (Infringement of the '7,566 Patent)

21           441. ~~342.~~—Entropic incorporates by reference each allegation of the paragraphs  
22 above as if fully set forth herein.

23           442. ~~343.~~—The '7,566 Patent duly issued on April 9, 2019 from an application  
24 filed February 7, 2017, an application filed September 19, 2005, and, *inter alia*, a  
25 provisional application filed December 2, 2004.

26           443. ~~344.~~—Entropic owns all substantial rights, interest, and title in and to the  
27 '7,566 Patent, including the sole and exclusive right to prosecute this action and  
28



1 enforce the '7,566 Patent against infringers, and to collect damages for all relevant  
2 times.

3 444. ~~345.~~ The '7,566 Patent is the Network Coordinator Patent, and is  
4 generally directed to, *inter alia*, broadband cable networks that allow devices to  
5 communicate directly over the existing coaxial cable with its current architecture  
6 without the need to modify the existing cable infrastructure. Each device  
7 communicates with the other devices in the network and establishes the best  
8 modulation and other transmission parameters that is optimized and periodically  
9 adapted to the channel between each pair of devices. '7,566 Patent, col. 4, lines 23–39.  
10 The '7,566 Patent has 20 claims, of which claims 1, 11, and 19 are independent. At  
11 least these claims of the '7,566 Patent are directed to a variety of techniques for  
12 controlling the admission of nodes in the MoCA network. A true and accurate copy of  
13 the '7,566 Patent is attached hereto as Exhibit K.

14 445. ~~346.~~ The '7,566 Patent is directed to patent-eligible subject matter  
15 pursuant to 35 U.S.C. § 101.

16 446. ~~347.~~ The '7,566 Patent is valid and enforceable, and presumed as such,  
17 pursuant to 35 U.S.C. § 282.

18 447. ~~348.~~ Comcast deploys one or more of the Accused MoCA  
19 Instrumentalities (e.g. XG1-A, XG1v3, XG1v4, XG2v2, and Arris DCX3200, Arris  
20 MR150CNM, Pace PR150BNM, Pace PX032ANI, Pace PXD01ANI, and/or Samsung  
21 SR150BNM and similarly operating devices) in connection with operating and  
22 providing the Accused Services.

23 448. ~~349.~~ The Accused MoCA Instrumentalities deployed by Comcast to  
24 customer premises remain the property of Comcast while deployed.

25 449. ~~350.~~ The Accused MoCA Instrumentalities operate while deployed in a  
26 manner controlled and intended by Comcast.  
27  
28



1           450. ~~351.~~ As set forth in the [infringement contentions that were served on](#)  
2 [Comcast on September 29, 2023](#) (attached ~~non-limiting claim chart~~ [\(hereto as](#) Exhibit  
3 L),<sup>20</sup> any product or system operating in a MoCA network compliant with the charted  
4 provisions of MoCA 1.0, 1.1, and/or 2.0 necessarily infringes at least claim 11 of the  
5 '7,566 Patent.

6           451. ~~352.~~ Each aspect of the functioning of the Accused MoCA  
7 Instrumentalities described in the claim chart operates while deployed to customer  
8 premises in a manner controlled and intended by Comcast.

9           452. ~~353.~~ Comcast provides no software, support or other facility to customers  
10 to modify any aspect of the functioning described in the claim chart of the Accused  
11 MoCA Instrumentalities while deployed to customer premises.

12           453. ~~354.~~ The Accused MoCA Instrumentalities are compliant with MoCA 1.0,  
13 1.1, and/or 2.0, as described in the '7,566 Patent claim chart, Exhibit L.

14           454. ~~355.~~ Comcast therefore directly infringes at least claim 11 of the '7,566  
15 Patent by using the Accused MoCA Instrumentalities to provide Accused Services to  
16 customers.

17           455. ~~356.~~ Comcast directly infringes at least claim 11 of the '7,566 Patent  
18 when it, for example, uses the Accused MoCA Instrumentalities to test, demonstrate or  
19 otherwise provide Accused Services and/or the Accused MoCA Instrumentalities.

20           456. ~~357.~~ Comcast directly infringes at least claim 11 of the '7,566 Patent by  
21 making, importing, selling, and/or offering for sale the Accused MoCA  
22 Instrumentalities, which meet every limitation of at least claim 11 of the '7,566 Patent,  
23 in connection with providing the Accused Services over an on-premises coaxial cable  
24 network.

25  
26  
27 <sup>20</sup> [The prior claim chart for this patent can be found at DE 67.](#)  
28



1 457. [REDACTED]

2 [REDACTED]

3 [REDACTED]

4 [REDACTED]

5 458. Comcast has known of or has been willfully blind to the '7,566 Patent  
6 since before, and no later than the date of, its acceptance of service of the original  
7 Complaint in this action on February 16, 2023.

8 459. Comcast has known of or has been willfully blind to the '7,566 Patent  
9 since before, and no later than the date of, its acceptance of service of the First  
10 Amended Complaint in this action on June 5, 2023.

11 460. Comcast has known of or has been willfully blind to the '7,566 Patent  
12 since before, and no later than the date of, its acceptance of service of Entropic's  
13 infringement contentions on September 29, 2023.

14 461. ~~358.~~ Comcast has known of or has been willfully blind to the '7,566  
15 Patent since before, and no later than the date of, its receipt of the August 9, 2022  
16 communications from Entropic.

17 462. ~~359.~~ Comcast has been aware that it infringes the '7,566 Patent no later  
18 than its receipt of Entropic's communication sent to Comcast on August 9, 2022.

19 463. ~~360.~~ Comcast has known of or has been willfully blind to the '7,566  
20 Patent since at least the day before [REDACTED]

21 464. ~~361.~~ Comcast has known of or has been willfully blind to the '7,566  
22 Patent since at least the day before investing in Entropic in or about 2006.

23 465. ~~362.~~ The '7,566 Patent issued while or before Comcast was a member of  
24 MoCA.

25 466. ~~363.~~ Because of Comcast's knowledge of Entropic Inc.'s work and  
26 contributions related to MoCA technology, Comcast had knowledge of the '7,566  
27 Patent before August 9, 2022 or was willfully blind to its existence.



1           467. ~~364.~~ The claims of the '7,566 Patent are essential to practicing at least  
2 MoCA standards versions 1.0, 1.1, and/or 2.0.

3           468. ~~365.~~ Comcast knew, or was willfully blind to the fact that the technology  
4 of the '7,566 Patent directly relates to networking over coaxial cable, including  
5 MoCA, at least as early as Comcast became aware of the existence of the '7,566  
6 Patent. Because of its familiarity with, and access to, the MoCA standards, Comcast  
7 knew, or was willfully blind to the fact, that use (by Comcast or its customers) of  
8 instrumentalities compliant with MoCA 1.0, 1.1, and/or 2.0 to deliver Comcast  
9 services would necessarily infringe one or more claims of the '7,566 Patent.

10           469. ~~366.~~ Since learning of the '7,566 Patent and its infringing activities,  
11 Comcast has failed to cease its infringing activities.

12           470. ~~367.~~ Comcast's customers and subscribers directly infringe at least claim  
13 11 of the '7,566 Patent by using the Accused MoCA Instrumentalities in connection  
14 with the Accused Services provided by Comcast.

15           471. ~~368.~~ Comcast actively induces its customers' and subscribers' direct  
16 infringement by providing the Accused Services through the Accused MoCA  
17 Instrumentalities, and associated support.

18           472. ~~369.~~ For example, Comcast actively induces infringement of at least claim  
19 11 of the '7,566 Patent by providing the Accused MoCA Instrumentalities to Comcast  
20 customers with specific instructions and/or assistance (including installation and  
21 maintenance) regarding the instantiation of a MoCA network and the use of the  
22 Accused MoCA Instrumentalities to infringe the '7,566 Patent.

23           473. ~~370.~~ Comcast aids, instructs, supports, and otherwise acts with the intent  
24 to cause an end user to make and/or use the MoCA network and/or use the Accused  
25 MoCA Instrumentalities to infringe every element of at least claim 11 of the '7,566  
26 Patent.  
27  
28



1           474. ~~371.~~ Additionally, Comcast contributes to the customers' and subscribers'  
2 direct infringement. Comcast provides, *inter alia*, the Accused MoCA  
3 Instrumentalities designed and configured to create a MoCA network and operate as  
4 nodes in the network, the use of which infringes at least claim 11 of the '7,566 Patent.

5           475. ~~372.~~ The Accused MoCA Instrumentalities have no substantial  
6 noninfringing uses. When an end user uses the Accused MoCA Instrumentalities in  
7 connection with the Accused Services provided by Comcast, the end user directly  
8 infringes at least claim 11 of the '7,566 Patent. The Accused MoCA Instrumentalities  
9 are therefore especially made or especially adapted for use in an infringing manner.

10           476. ~~373.~~ Comcast's inducement of, and contribution to, the direct  
11 infringement of at least claim 11 of the '7,566 Patent has been, and is, continuous and  
12 ongoing through the acts described above in connection with Comcast's provision of  
13 the Accused Services.

14           477. ~~374.~~ Comcast's infringement of the '7,566 Patent is, has been, and  
15 continues to be willful, intentional, deliberate, and/or in conscious disregard for  
16 Entropic's rights under the patent.

17           478. ~~375.~~ Entropic has been damaged as a result of the infringing conduct  
18 alleged above. Comcast is liable to Entropic in an amount that compensates Entropic  
19 for Comcast's infringement, which by law cannot be less than a reasonable royalty,  
20 together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

21           479. ~~376.~~ Entropic is aware of no obligation to mark any instrumentality with  
22 the '7,566 Patent in accordance with 35 U.S.C. § 287.

## 23                                   COUNT VII

### 24                                   (Infringement of the '539 Patent)

25           480. ~~377.~~ Entropic incorporates by reference each allegation of the paragraphs  
26 above as if fully set forth herein.



1           481. ~~378.~~ The '539 Patent duly issued on December 31, 2013 from an  
2 application filed September 29, 2005 and, *inter alia*, a provisional application filed  
3 December 2, 2004.

4           482. ~~379.~~ Entropic owns all substantial rights, interest, and title in and to the  
5 '539 Patent, including the sole and exclusive right to prosecute this action and enforce  
6 the '539 Patent against infringers, and to collect damages for all relevant times.

7           483. ~~380.~~ The '539 Patent is one of the Link Maintenance Patents, and is  
8 generally directed to, *inter alia*, a physical layer transmitter that performs all of the  
9 necessary RF, analog and digital processing required for transmitting MAC messages  
10 between devices in a broadband cable network. '539 Patent, col. 4, lines 37–48. The  
11 '539 Patent has seven claims, of which claim 1 is independent. At least this claim of  
12 the '539 Patent is directed at a variety of techniques for monitoring and maintaining  
13 utilized modulation profiles in the MoCA network. A true and accurate copy of the  
14 '539 Patent is attached hereto as Exhibit M.

15           484. ~~381.~~ The '539 Patent is directed to patent-eligible subject matter pursuant  
16 to 35 U.S.C. § 101.

17           485. ~~382.~~ The '539 Patent is valid and enforceable, and presumed as such,  
18 pursuant to 35 U.S.C. § 282.

19           486. ~~383.~~ Comcast deploys one or more of the Accused MoCA  
20 Instrumentalities (e.g. XG1-A, XG1v3, XG1v4, XG2v2, and Arris DCX3200, Arris  
21 MR150CNM, Pace PR150BNM, Pace PX032ANI, Pace PXD01ANI, and/or Samsung  
22 SR150BNM and similarly operating devices) in connection with operating and  
23 providing the Accused Services.

24           487. ~~384.~~ The Accused MoCA Instrumentalities deployed by Comcast to  
25 customer premises remain the property of Comcast while deployed.

26           488. ~~385.~~ The Accused MoCA Instrumentalities operate while deployed in a  
27 manner controlled and intended by Comcast.  
28



1           489. ~~386.~~ As set forth in the [infringement contentions that were served on](#)  
2 [Comcast on September 29, 2023](#) (attached ~~non-limiting claim chart~~ [\(hereto as](#) Exhibit  
3 N),<sup>21</sup> any product or system operating in a MoCA network compliant with the charted  
4 provisions of MoCA 1.0, 1.1, and/or 2.0 necessarily infringes at least claim 1 of the  
5 '539 Patent.

6           490. ~~387.~~ Each aspect of the functioning of the Accused MoCA  
7 Instrumentalities described in the claim chart operates while deployed to customer  
8 premises in a manner controlled and intended by Comcast.

9           491. ~~388.~~ Comcast provides no software, support or other facility to customers  
10 to modify any aspect of the functioning described in the claim chart of the Accused  
11 MoCA Instrumentalities while deployed to customer premises.

12           492. ~~389.~~ The Accused MoCA Instrumentalities are compliant with MoCA 1.0,  
13 1.1, and/or 2.0, as described in the '539 Patent claim chart, Exhibit N.

14           493. ~~390.~~ Comcast therefore directly infringes at least claim 1 of the '539  
15 Patent by using the Accused MoCA Instrumentalities to provide Accused Services to  
16 customers.

17           494. ~~391.~~ Comcast directly infringes at least claim 1 of the '539 Patent when it,  
18 for example, uses the Accused MoCA Instrumentalities to test, demonstrate or  
19 otherwise provide Accused Services.

20           495. ~~392.~~ Comcast directly infringes at least claim 1 of the '539 Patent by  
21 making, importing, selling, and/or offering for sale the Accused MoCA  
22 Instrumentalities, which meet every limitation of at least claim 1 of the '539 Patent, in  
23 connection with providing the Accused Services over an on-premises coaxial cable  
24 network.

25  
26  
27 <sup>21</sup> [The prior claim chart for this patent can be found at DE 67.](#)  
28



1 496. [REDACTED]

2 [REDACTED]

3 [REDACTED]

4 [REDACTED]

5 497. Comcast has known of or has been willfully blind to the '539 Patent since  
6 its filing, given that this patent was filed during the time that MoCA was being  
7 developed and Comcast was intimately aware of the technology needed to comply with  
8 the MoCA standard that was being created.

9 498. Comcast has known of or has been willfully blind to the '539 Patent since  
10 before, and no later than the date of, its acceptance of service of the original Complaint  
11 in this action on February 16, 2023.

12 499. Comcast has known of or has been willfully blind to the '539 Patent since  
13 before, and no later than the date of, its acceptance of service of the First Amended  
14 Complaint in this action on June 5, 2023.

15 500. Comcast has known of or has been willfully blind to the '539 Patent since  
16 before, and no later than the date of, its acceptance of service of Entropic's  
17 infringement contentions on September 29, 2023.

18 501. ~~393.~~ Comcast has known of or has been willfully blind to the '539 Patent  
19 since before, and no later than the date of, its receipt of the August 9, 2022  
20 communications from Entropic.

21 502. ~~394.~~ Comcast has been aware that it infringes the '539 Patent no later than  
22 its receipt of Entropic's communication sent to Comcast on August 9, 2022.

23 503. ~~395.~~ Comcast has known of or has been willfully blind to the '539 Patent  
24 since at least the day before [REDACTED]

25 504. ~~396.~~ Comcast has known of or has been willfully blind to the '539 Patent  
26 since at least the day before investing in Entropic in or about 2006.



1           505. ~~397.~~ The '539 Patent issued while or before Comcast was a member of  
2 MoCA.

3           506. ~~398.~~ Because of Comcast's knowledge of Entropic Inc.'s work and  
4 contributions related to MoCA technology, Comcast had knowledge of the '539 Patent  
5 before August 9, 2022 or was willfully blind to its existence.

6           507. ~~399.~~ The claims of the '539 Patent are essential to practicing at least  
7 MoCA standards versions 1.0, 1.1, and/or 2.0.

8           508. ~~400.~~ Comcast knew, or was willfully blind to the fact that the technology  
9 of the '539 Patent directly relates to networking over coaxial cable, including MoCA,  
10 at least as early as Comcast became aware of the existence of the '539 Patent. Because  
11 of its familiarity with, and access to, the MoCA standards, Comcast knew, or was  
12 willfully blind to the fact, that use (by Comcast or its customers) of instrumentalities  
13 compliant with MoCA 1.0, 1.1, and/or 2.0 to deliver Comcast services would  
14 necessarily infringe one or more claims of the '539 Patent.

15           509. ~~401.~~ Since learning of the '539 Patent and its infringing activities,  
16 Comcast has failed to cease its infringing activities.

17           510. ~~402.~~ Comcast's customers and subscribers directly infringe at least claim  
18 1 of the '539 Patent by using the Accused MoCA Instrumentalities in connection with  
19 the Accused Services provided by Comcast.

20           511. ~~403.~~ Comcast actively induces its customers' and subscribers' direct  
21 infringement by providing the Accused Services through the Accused MoCA  
22 Instrumentalities, and associated support.

23           512. ~~404.~~ For example, Comcast actively induces infringement of at least claim  
24 1 of the '539 Patent by providing the Accused MoCA Instrumentalities to Comcast  
25 customers with specific instructions and/or assistance (including installation and  
26 maintenance) regarding the instantiation of a MoCA network and the use of the  
27 Accused MoCA Instrumentalities to infringe the '539 Patent.  
28



1           513. ~~405.~~ Comcast aids, instructs, supports, and otherwise acts with the intent  
2 to cause an end user to make and/or use the MoCA network and/or use the Accused  
3 MoCA Instrumentalities to infringe every element of at least claim 1 of the '539  
4 Patent.

5           514. ~~406.~~ Additionally, Comcast contributes to the customers' and subscribers'  
6 direct infringement. Comcast provides, *inter alia*, the Accused MoCA  
7 Instrumentalities designed and configured to create a MoCA network and operate as  
8 nodes in the network, the use of which infringes at least claim 1 of the '539 Patent.

9           515. ~~407.~~ The Accused MoCA Instrumentalities have no substantial  
10 noninfringing uses. When an end user uses the Accused MoCA Instrumentalities in  
11 connection with the Accused Services provided by Comcast, the end user directly  
12 infringes at least claim 1 of the '539 Patent. The Accused MoCA Instrumentalities are  
13 therefore especially made or especially adapted for use in an infringing manner.

14           516. ~~408.~~ Comcast's inducement of, and contribution to, the direct  
15 infringement of at least claim 1 of the '539 Patent has been, and is, continuous and  
16 ongoing through the acts described above in connection with Comcast's provision of  
17 the Accused Services.

18           517. ~~409.~~ Comcast's infringement of the '539 Patent is, has been, and  
19 continues to be willful, intentional, deliberate, and/or in conscious disregard for  
20 Entropic's rights under the patent.

21           518. ~~410.~~ Entropic has been damaged as a result of the infringing conduct  
22 alleged above. Comcast is liable to Entropic in an amount that compensates Entropic  
23 for Comcast's infringement, which by law cannot be less than a reasonable royalty,  
24 together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

25           519. ~~411.~~ Entropic is aware of no obligation to mark any instrumentality with  
26 the '539 Patent in accordance with 35 U.S.C. § 287.  
27  
28



**COUNT VIII**

**(Infringement of the '213 Patent)**

520. ~~412.~~ Entropic incorporates by reference each allegation of the paragraphs above as if fully set forth herein.

521. ~~413.~~ The '213 Patent duly issued on December 5, 2017 from an application filed February 6, 2008, and, *inter alia*, a provisional application filed on February 6 2007.

522. ~~414.~~ Entropic owns all substantial rights, interest, and title in and to the '213 Patent, including the sole and exclusive right to prosecute this action and enforce the '213 Patent against infringers, and to collect damages for all relevant times.

523. ~~415.~~ The '213 Patent is one of the PQoS Flows Patents, and is generally directed to, *inter alia*, low-cost and high-speed management of resources within a network in order to secure the capability to distribute multimedia data (such as video/audio, games, images, generic data, and interactive services) between devices within existing on-premises coaxial cable networks. '213 Patent, col. 3, lines 46–53. The '213 Patent has 24 claims, of which claims 1, 13, and 23 are independent. At least these claims of the '213 Patent are directed to a variety of techniques for allocating resources for guaranteed quality of service flows in the MoCA network. A true and accurate copy of the '213 Patent is attached hereto as Exhibit O.

524. ~~416.~~ The '213 Patent is directed to patent-eligible subject matter pursuant to 35 U.S.C. § 101.

525. ~~417.~~ The '213 Patent is valid and enforceable, and presumed as such, pursuant to 35 U.S.C. § 282.

526. ~~418.~~ Comcast deploys one or more of the Accused MoCA Instrumentalities (e.g. XG1-A, XG1v3, XG1v4, XG2v2, and Arris DCX3200, Arris MR150CNM, Pace PR150BNM, Pace PX032ANI, Pace PXD01ANI, and/or Samsung



1 SR150BNM and similarly operating devices) in connection with operating and  
2 providing the Accused Services.

3 527. ~~419.~~ The Accused MoCA Instrumentalities deployed by Comcast to  
4 customer premises remain the property of Comcast while deployed.

5 528. ~~420.~~ The Accused MoCA Instrumentalities operate while deployed in a  
6 manner controlled and intended by Comcast.

7 529. ~~421.~~ As set forth in the infringement contentions that were served on  
8 Comcast on September 29, 2023 (attached ~~non-limiting claim chart~~ (hereto as Exhibit  
9 P),<sup>22</sup> any product or system operating in a MoCA network compliant with the charted  
10 provisions of MoCA 1.1, or 2.0 necessarily infringes at least claim 1 of the '213  
11 Patent.

12 530. ~~422.~~ Each aspect of the functioning of the Accused MoCA  
13 Instrumentalities described in the claim chart operates while deployed to customer  
14 premises in a manner controlled and intended by Comcast.

15 531. ~~423.~~ Comcast provides no software, support or other facility to customers  
16 to modify any aspect of the functioning described in the claim chart of the Accused  
17 MoCA Instrumentalities while deployed to customer premises.

18 532. ~~424.~~ The Accused MoCA Instrumentalities are compliant with MoCA 1.1  
19 and/or MoCA 2.0, as described in the '213 Patent claim chart, Exhibit P.

20 533. ~~425.~~ Comcast therefore directly infringes at least claim 1 of the '213  
21 Patent by using the Accused MoCA Instrumentalities to provide Accused Services to  
22 customers.

23 534. ~~426.~~ Comcast sells the Accused Services to its customers and subscribers  
24 for a fee. Pursuant to the sale of these services, Comcast uses the method recited in at  
25 least claim 1 of the '213 Patent to provide the Accused Services to Comcast's  
26

27 <sup>22</sup> The prior claim chart for this patent can be found at DE 67.  
28



1 customers and subscribers through the Accused MoCA Instrumentalities. Comcast is  
2 therefore engaging in the infringing use of at least claim 1 of the '213 Patent in order  
3 to generate revenue from its customers and subscribers.

4 535. ~~427.~~ Comcast directly infringes at least claim 1 of the '213 Patent when it,  
5 for example, uses the Accused MoCA Instrumentalities to test, demonstrate or  
6 otherwise provide Accused Services.

7 536. [REDACTED]  
8 [REDACTED]  
9 [REDACTED]  
10 [REDACTED]

11 537. Comcast has known of or has been willfully blind to the '213 Patent since  
12 before, and no later than the date of, its acceptance of service of the original Complaint  
13 in this action on February 16, 2023.

14 538. Comcast has known of or has been willfully blind to the '213 Patent since  
15 before, and no later than the date of, its acceptance of service of the First Amended  
16 Complaint in this action on June 5, 2023.

17 539. Comcast has known of or has been willfully blind to the '213 Patent since  
18 before, and no later than the date of, its acceptance of service of Entropic's  
19 infringement contentions on September 29, 2023.

20 540. ~~428.~~ Comcast has known of or has been willfully blind to the '213 Patent  
21 since before, and no later than the date of, its receipt of the August 9, 2022  
22 communications from Entropic.

23 541. ~~429.~~ Comcast has been aware that it infringes the '213 Patent no later than  
24 its receipt of Entropic's communications sent to Comcast on August 9, 2022.

25 542. ~~430.~~ Comcast has known of or has been willfully blind to the '213 Patent  
26 since at least the day before [REDACTED]  
27  
28



1           543. ~~431.~~ The '213 Patent issued while or before Comcast was a member of  
2 MoCA.

3           544. ~~432.~~ Because of Comcast's knowledge of Entropic Inc.'s work and  
4 contributions related to MoCA technology, Comcast had knowledge of the '213 Patent  
5 before August 9, 2022 or was willfully blind to its existence.

6           545. ~~433.~~ The claims of the '213 Patent are essential to practicing at least  
7 MoCA standards versions 1.1, and/or 2.0.

8           546. ~~434.~~ Comcast knew, or was willfully blind to the fact that the technology  
9 of the '213 Patent directly relates to networking over coaxial cable, including MoCA,  
10 at least as early as Comcast became aware of the existence of the '213 Patent. Because  
11 of its familiarity with, and access to, the MoCA standards, Comcast knew, or was  
12 willfully blind to the fact, that use (by Comcast or its customers) of instrumentalities  
13 compliant with MoCA 1.1, and/or 2.0 to deliver Comcast services would necessarily  
14 infringe one or more claims of the '213 Patent.

15           547. ~~435.~~ Since learning of the '213 Patent and its infringing activities,  
16 Comcast has failed to cease its infringing activities.

17           548. ~~436.~~ Comcast's customers and subscribers directly infringe at least claim  
18 1 of the '213 Patent by using the Accused MoCA Instrumentalities in connection with  
19 the Accused Services provided by Comcast.

20           549. ~~437.~~ Comcast actively induces its customers' and subscribers' direct  
21 infringement by providing the Accused Services and associated support.

22           550. ~~438.~~ For example, Comcast actively induces infringement of at least claim  
23 1 of the '213 Patent by providing the Accused MoCA Instrumentalities to Comcast  
24 customers with specific instructions and/or assistance (including installation and  
25 maintenance) regarding the instantiation of a MoCA network and the use of the  
26 Accused MoCA Instrumentalities to infringe the '213 Patent.  
27  
28



1           551. ~~439.~~ Comcast aids, instructs, supports, and otherwise acts with the intent  
2 to cause an end user to make and/or use the MoCA network and/or use the Accused  
3 MoCA Instrumentalities to infringe every element of at least claim 1 of the '213  
4 Patent.

5           552. ~~440.~~ Additionally, Comcast contributes to the customers' and subscribers'  
6 direct infringement. Comcast provides at least the Accused MoCA Instrumentalities  
7 that create and are at least substantially all of a MoCA network to be used to infringe  
8 at least claim 1 of the '213 Patent.

9           553. ~~441.~~—The Accused MoCA Instrumentalities have no substantial  
10 noninfringing uses. When an end user uses the Accused MoCA Instrumentalities in  
11 connection with the Accused Services provided by Comcast, the end user directly  
12 infringes at least claim 1 of the '213 Patent. The Accused MoCA Instrumentalities are  
13 therefore especially made or especially adapted for use in an infringing manner.

14           554. ~~442.~~—Comcast's inducement of, and contribution to, the direct  
15 infringement of at least claim 1 of the '213 Patent has been, and is, continuous and  
16 ongoing through the acts described above in connection with Comcast's provision of  
17 the Accused Services.

18           555. ~~443.~~—Comcast's infringement of the '213 Patent is, has been, and  
19 continues to be willful, intentional, deliberate, and/or in conscious disregard for  
20 Entropic's rights under the patent.

21           556. ~~444.~~—Entropic has been damaged as a result of the infringing conduct  
22 alleged above. Comcast is liable to Entropic in an amount that compensates Entropic  
23 for Comcast's infringement, which by law cannot be less than a reasonable royalty,  
24 together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

25           557. ~~445.~~—Upon information and belief, there is no duty to mark any  
26 instrumentality with the '213 Patent in accordance with 35 U.S.C. § 287(a).  
27  
28



**COUNT IX**

**(Infringement of the '422 Patent)**

558. ~~446.~~ Entropic incorporates by reference each allegation of the paragraphs above as if fully set forth herein.

559. ~~447.~~ The '422 Patent duly issued on October 1, 2019 from an application filed December 5, 2017, an application filed February 6, 2008, and, *inter alia*, a provisional application filed February 6, 2007.

560. ~~448.~~ Entropic owns all substantial rights, interest, and title in and to the '422 Patent, including the sole and exclusive right to prosecute this action and enforce the '422 Patent against infringers, and to collect damages for all relevant times.

561. ~~449.~~ The '422 Patent is one of the PQoS Flows Patents, and is generally directed to, *inter alia*, low-cost and high-speed management of resources within a network in order to secure the capability to distribute multimedia data (such as video/audio, games, images, generic data, and interactive services) between devices within existing on-premises coaxial cable networks. '422 Patent, col. 3, lines 53–60. The '422 Patent has 20 claims, of which, claims 1, 5, 12–17 are independent. At least these claims of the '422 Patent are directed to a variety of techniques for allocating resources for guaranteed quality of service flows in the MoCA network. A true and accurate copy of the '422 Patent is attached hereto as Exhibit Q.

562. ~~450.~~ The '422 Patent is directed to patent-eligible subject matter pursuant to 35 U.S.C. § 101.

563. ~~451.~~ The '422 Patent is valid and enforceable, and presumed as such, pursuant to 35 U.S.C. § 282.

564. ~~452.~~ Comcast deploys one or more of the Accused MoCA Instrumentalities (e.g. XG1-A, XG1v3, XG1v4, XG2v2, and Arris DCX3200, Arris MR150CNM, Pace PR150BNM, Pace PX032ANI, Pace PXD01ANI, and/or Samsung



1 SR150BNM and similarly operating devices) in connection with operating and  
2 providing the Accused Services.

3 565. ~~453.~~ The Accused MoCA Instrumentalities deployed by Comcast to  
4 customer premises remain the property of Comcast while deployed.

5 566. ~~454.~~ The Accused MoCA Instrumentalities operate while deployed in a  
6 manner controlled and intended by Comcast.

7 567. ~~455.~~ As set forth in the infringement contentions that were served on  
8 Comcast on September 29, 2023 (attached ~~non-limiting claim chart~~ (hereto as Exhibit  
9 R),<sup>23</sup> any product or system operating in a MoCA network compliant with the charted  
10 provisions of MoCA 1.1, or 2.0 necessarily infringes at least claim 1 of the '422  
11 Patent.

12 568. ~~456.~~ Each aspect of the functioning of the Accused MoCA  
13 Instrumentalities described in the claim chart operates while deployed to customer  
14 premises in a manner controlled and intended by Comcast.

15 569. ~~457.~~ Comcast provides no software, support or other facility to customers  
16 to modify any aspect of the functioning described in the claim chart of the Accused  
17 MoCA Instrumentalities while deployed to customer premises.

18 570. ~~458.~~ The Accused MoCA Instrumentalities are compliant with MoCA 1.1  
19 and/or MoCA 2.0, as described in the '422 Patent claim chart, Exhibit R.

20 571. ~~459.~~ Comcast therefore directly infringes at least claim 1 of the '422  
21 Patent by using the Accused MoCA Instrumentalities to provide Accused Services to  
22 customers.

23 572. ~~460.~~ Comcast directly infringes at least claim 1 of the '422 Patent when it,  
24 for example, uses the Accused MoCA Instrumentalities to test, demonstrate or  
25 otherwise provide Accused Services.

26  
27 <sup>23</sup> The prior claim chart for this patent can be found at DE 67.  
28



1           573. ~~461.~~ Comcast directly infringes at least claim 1 of the '422 Patent by  
2 making, importing, selling, and/or offering for sale the Accused MoCA  
3 Instrumentalities in connection with providing the Accused Services over an  
4 on-premises coaxial cable network, which meets every limitation of at least claim 1 of  
5 the '422 Patent.

6           574. [REDACTED]  
7 [REDACTED]  
8 [REDACTED]  
9 [REDACTED]

10           575. Comcast has known of or has been willfully blind to the '422 Patent since  
11 before, and no later than the date of, its acceptance of service of the original Complaint  
12 in this action on February 16, 2023.

13           576. Comcast has known of or has been willfully blind to the '422 Patent since  
14 before, and no later than the date of, its acceptance of service of the First Amended  
15 Complaint in this action on June 5, 2023.

16           577. Comcast has known of or has been willfully blind to the '422 Patent since  
17 before, and no later than the date of, its acceptance of service of Entropic's  
18 infringement contentions on September 29, 2023

19           578. ~~462.~~ Comcast has known of or has been willfully blind to the '422 Patent  
20 since before, and no later than the date of, its receipt of the August 9, 2022  
21 communications from Entropic.

22           579. ~~463.~~ Comcast has been aware that it infringes the '422 Patent no later than  
23 its receipt of Entropic's communication sent to Comcast on August 9, 2022.

24           580. ~~464.~~ Comcast has known of or has been willfully blind to the '422 Patent  
25 since at least the day before [REDACTED]

26           581. ~~465.~~ The '422 Patent issued while or before Comcast was a member of  
27 MoCA.  
28



1           582. ~~466.~~ Because of Comcast's knowledge of Entropic Inc.'s work and  
2 contributions related to MoCA technology, Comcast had knowledge of the '422 Patent  
3 before August 9, 2022 or was willfully blind to its existence.

4           583. ~~467.~~ The claims of the '422 Patent are essential to practicing at least  
5 MoCA standards versions 1.1, and/or 2.0.

6           584. ~~468.~~ Comcast knew, or was willfully blind to the fact that the technology  
7 of the '422 Patent directly relates to networking over coaxial cable, including MoCA,  
8 at least as early as Comcast became aware of the existence of the '422 Patent. Because  
9 of its familiarity with, and access to, the MoCA standards, Comcast knew, or was  
10 willfully blind to the fact, that use (by Comcast or its customers) of instrumentalities  
11 compliant with MoCA 1.1, and/or 2.0 to deliver Comcast services would necessarily  
12 infringe one or more claims of the '422 Patent.

13           585. ~~469.~~ Since learning of the '422 Patent and its infringing activities,  
14 Comcast has failed to cease its infringing activities.

15           586. ~~470.~~ Comcast's customers and subscribers directly infringe at least claim  
16 1 of the '422 Patent by using the Accused MoCA Instrumentalities in connection with  
17 the Accused Services provided by Comcast.

18           587. ~~471.~~ Comcast actively induces its customers' and subscribers' direct  
19 infringement by providing the Accused Services and associated support.

20           588. ~~472.~~ For example, Comcast actively induces infringement of at least claim  
21 1 of the '422 Patent by providing the Accused MoCA Instrumentalities to Comcast  
22 customers with specific instructions and/or assistance (including installation and  
23 maintenance) regarding the instantiation of a MoCA network and the use of the  
24 Accused MoCA Instrumentalities to infringe the '422 Patent.

25           589. ~~473.~~ Comcast aids, instructs, supports, and otherwise acts with the intent  
26 to cause an end user to make and/or use the MoCA network and/or use the Accused  
27



1 MoCA Instrumentalities to infringe every element of at least claim 1 of the '422  
2 Patent.

3 590. ~~474.~~ Additionally, Comcast contributes to the customers' and subscribers'  
4 direct infringement. Comcast provides at least the Accused MoCA Instrumentalities  
5 that create and are at least substantially all of a MoCA network to be used to infringe  
6 at least claim 1 of the '422 Patent.

7 591. ~~475.~~ The Accused MoCA Instrumentalities have no substantial  
8 noninfringing uses. When an end user uses the Accused MoCA Instrumentalities in  
9 connection with the Accused Services provided by Comcast, the end user directly  
10 infringes at least claim 1 of the '422 Patent. The Accused MoCA Instrumentalities are  
11 therefore especially made or especially adapted for use in an infringing manner.

12 592. ~~476.~~ Comcast's inducement of, and contribution to, the direct  
13 infringement of at least claim 1 of the '422 Patent has been, and is, continuous and  
14 ongoing through the acts described above in connection with Comcast's provision of  
15 the Accused Services.

16 593. ~~477.~~ Comcast's infringement of the '422 Patent is, has been, and  
17 continues to be willful, intentional, deliberate, and/or in conscious disregard for  
18 Entropic's rights under the patent.

19 594. ~~478.~~ Entropic has been damaged as a result of the infringing conduct  
20 alleged above. Comcast is liable to Entropic in an amount that compensates Entropic  
21 for Comcast's infringement, which by law cannot be less than a reasonable royalty,  
22 together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

23 595. ~~479.~~ Upon information and belief, there is no duty to mark any  
24 instrumentality with the '422 Patent in accordance with 35 U.S.C. § 287.



**COUNT X**

**(Infringement of the '910 Patent)**

596. ~~480.~~ Entropic incorporates by reference each allegation of the paragraphs above as if fully set forth herein.

597. ~~481.~~ The '910 Patent duly issued on July 24, 2012 from an application filed May 9, 2008, and a provisional application filed May 9, 2007.

598. ~~482.~~ Entropic owns all substantial rights, interest, and title in and to the '910 Patent, including the sole and exclusive right to prosecute this action and enforce the '910 Patent against infringers, and to collect damages for all relevant times.

599. ~~483.~~ The '910 Patent is the Packet Aggregation Patent, and is generally directed to, *inter alia*, transmitting data over a network, where the transmitting device aggregates packets that are directed to a common destination node. This reduces the transmitted packet overhead of the network by eliminating interframe gaps, preamble information, and extra headers. '910 Patent, col. 1, line 66 – col. 2, line 3. The '910 Patent has three claims, all of which are independent. At least these claims of the '910 Patent are directed to a variety of techniques for aggregating packet data units in the MoCA network. A true and accurate copy of the '910 Patent is attached hereto as Exhibit S.

600. ~~484.~~ The '910 Patent is directed to patent-eligible subject matter pursuant to 35 U.S.C. § 101.

601. ~~485.~~ The '910 Patent is valid and enforceable, and presumed as such, pursuant to 35 U.S.C. § 282.

602. ~~486.~~ Comcast deploys one or more of the Accused MoCA Instrumentalities (e.g. XG1-A, XG1v3, XG1v4, XG2v2, and Arris DCX3200, Arris MR150CNM, Pace PR150BNM, Pace PX032ANI, Pace PXD01ANI, and/or Samsung SR150BNM and similarly operating devices) in connection with operating and providing the Accused Services.



1           603. ~~487.~~ The Accused MoCA Instrumentalities deployed by Comcast to  
2 customer premises remain the property of Comcast while deployed.

3           604. ~~488.~~ The Accused MoCA Instrumentalities operate while deployed in a  
4 manner controlled and intended by Comcast.

5           605. ~~489.~~ As set forth in the infringement contentions that were served on  
6 Comcast on September 29, 2023 (attached ~~non-limiting claim chart~~ (hereto as Exhibit  
7 T),<sup>24</sup> any product or system operating in a MoCA network compliant with the charted  
8 provisions of MoCA 1.1, or 2.0 necessarily infringes at least claim 3 of the '910  
9 Patent.

10           606. ~~490.~~ Each aspect of the functioning of the Accused MoCA  
11 Instrumentalities described in the claim chart operates while deployed to customer  
12 premises in a manner controlled and intended by Comcast.

13           607. ~~491.~~ Comcast provides no software, support or other facility to customers  
14 to modify any aspect of the functioning described in the claim chart of the Accused  
15 MoCA Instrumentalities while deployed to customer premises.

16           608. ~~492.~~ The Accused MoCA Instrumentalities are compliant with MoCA  
17 1.1., and/or MoCA 2.0, as described in the '910 Patent claim chart, Exhibit T.

18           609. ~~493.~~ Comcast therefore directly infringes at least claim 3 of the '910  
19 Patent by using the Accused MoCA Instrumentalities to provide Accused Services to  
20 customers.

21           610. ~~494.~~ Comcast directly infringes at least claim 3 of the '910 Patent when it,  
22 for example, uses the Accused MoCA Instrumentalities to test, demonstrate or  
23 otherwise provide Accused Services.

24           611. ~~495.~~ Comcast directly infringes at least claim 3 of the '910 Patent by  
25 making, importing, selling, and/or offering for sale the Accused MoCA  
26

27 <sup>24</sup> The prior claim chart for this patent can be found at DE 67.  
28



1 Instrumentalities, which meet every limitation of at least claim 3 of the '910 Patent, in  
2 connection with providing the Accused Services over an on-premises coaxial cable  
3 network.

4 612. [REDACTED]  
5 [REDACTED]  
6 [REDACTED]  
7 [REDACTED]

8 613. Comcast has known of or has been willfully blind to the '910 Patent since  
9 before, and no later than the date of, its acceptance of service of the original Complaint  
10 in this action on February 16, 2023.

11 614. Comcast has known of or has been willfully blind to the '910 Patent since  
12 before, and no later than the date of, its acceptance of service of the First Amended  
13 Complaint in this action on June 5, 2023.

14 615. Comcast has known of or has been willfully blind to the '910 Patent since  
15 before, and no later than the date of, its acceptance of service of Entropic's  
16 infringement contentions on September 29, 2023.

17 616. ~~496.~~ Comcast has known of or has been willfully blind to the '910 Patent  
18 since before, and no later than the date of, its receipt of the August 9, 2022  
19 communications from Entropic.

20 617. ~~497.~~ Comcast has been aware that it infringes the '910 Patent no later than  
21 its receipt of Entropic's communication sent to Comcast on August 9, 2022.

22 618. ~~498.~~ Comcast has known of or has been willfully blind to the '910 Patent  
23 since at least the day before [REDACTED]

24 619. ~~499.~~ The '910 Patent issued while or before Comcast was a member of  
25 MoCA.  
26  
27  
28



1           620. ~~500.~~ Because of Comcast's knowledge of Entropic Inc.'s work and  
2 contributions related to MoCA technology, Comcast had knowledge of the '910 Patent  
3 before August 9, 2022 or was willfully blind to its existence.

4           621. ~~501.~~ The claims of the '910 Patent are essential to practicing at least  
5 MoCA standards versions 1.1, and/or 2.0.

6           622. ~~502.~~ Comcast knew, or was willfully blind to the fact that the technology  
7 of the '910 Patent directly relates to networking over coaxial cable, including MoCA,  
8 at least as early as Comcast became aware of the existence of the '910 Patent. Because  
9 of its familiarity with, and access to, the MoCA standards, Comcast knew, or was  
10 willfully blind to the fact, that use (by Comcast or its customers) of instrumentalities  
11 compliant with MoCA 1.1, and/or 2.0 to deliver Comcast services would necessarily  
12 infringe one or more claims of the '910 Patent.

13           623. ~~503.~~ Since learning of the '910 Patent and its infringing activities,  
14 Comcast has failed to cease its infringing activities.

15           624. ~~504.~~ Comcast's customers and subscribers directly infringe at least claim  
16 3 of the '910 Patent by using the Accused MoCA Instrumentalities in connection with  
17 the Accused Services provided by Comcast.

18           625. ~~505.~~ Comcast actively induces its customers' and subscribers' direct  
19 infringement by providing the Accused Services through the Accused MoCA  
20 Instrumentalities, and associated support.

21           626. ~~506.~~ For example, Comcast actively induces infringement of at least claim  
22 3 of the '910 Patent by providing the Accused MoCA Instrumentalities to Comcast  
23 customers with specific instructions and/or assistance (including installation and  
24 maintenance) regarding the instantiation of a MoCA network and the use of the  
25 Accused MoCA Instrumentalities to infringe the '910 Patent.

26           627. ~~507.~~ Comcast aids, instructs, supports, and otherwise acts with the intent  
27 to cause an end user to make and/or use the MoCA network and/or use the Accused  
28



1 MoCA Instrumentalities to infringe every element of at least claim 3 of the '910  
2 Patent.

3 628. ~~508.~~ Additionally, Comcast contributes to the customers' and subscribers'  
4 direct infringement. Comcast provides, *inter alia*, the Accused MoCA  
5 Instrumentalities designed and configured to create a MoCA network and operate as  
6 nodes in the network, the use of which infringes at least claim 3 of the '910 Patent.

7 629. ~~509.~~ The Accused MoCA Instrumentalities have no substantial  
8 noninfringing uses. When an end user uses the Accused MoCA Instrumentalities in  
9 connection with the Accused Services provided by Comcast, the end user directly  
10 infringes at least claim 3 of the '910 Patent. The Accused MoCA Instrumentalities are  
11 therefore especially made or especially adapted for use in an infringing manner.

12 630. ~~510.~~ Comcast's inducement of, and contribution to, the direct  
13 infringement of at least claim 3 of the '910 Patent has been, and is, continuous and  
14 ongoing through the acts described above in connection with Comcast's provision of  
15 the Accused Services.

16 631. ~~511.~~ Comcast's infringement of the '910 Patent is, has been, and  
17 continues to be willful, intentional, deliberate, and/or in conscious disregard for  
18 Entropic's rights under the patent.

19 632. ~~512.~~ Entropic has been damaged as a result of the infringing conduct  
20 alleged above. Comcast is liable to Entropic in an amount that compensates Entropic  
21 for Comcast's infringement, which by law cannot be less than a reasonable royalty,  
22 together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

23 633. ~~513.~~ Entropic is aware of no obligation to mark any instrumentality with  
24 the '910 Patent in accordance with 35 U.S.C. § 287.



**COUNT XI**

**(Infringement of the '0,566 Patent)**

634. ~~514.~~ Entropic incorporates by reference each allegation of the paragraphs above as if fully set forth herein.

635. ~~515.~~ The '0,566 Patent duly issued on November 27, 2012 from an application filed October 15, 2009, and, *inter alia*, a provisional application filed October 16, 2008.

636. ~~516.~~ Entropic owns all substantial rights, interest, and title in and to the '0,566 Patent, including the sole and exclusive right to prosecute this action and enforce the '0,566 Patent against infringers, and to collect damages for all relevant times.

637. ~~517.~~ The '0,566 Patent is the OFDMA Patent, and is generally directed to, *inter alia*, "allow[ing] multiple transmitting network devices to transmit under an orthogonal frequency divisional multiple access (OFDMA) mode to a receiving network device." '0,566 Patent, Abstract. The '0,566 Patent has 18 claims, of which claims 1, 7, 13, and 16 are independent. At least these claims of the '0,566 Patent are directed to a variety of techniques for assigning communication resources to one or more nodes in the MoCA network. A true and accurate copy of the '0,566 Patent is attached hereto as Exhibit U.

638. ~~518.~~ The '0,566 Patent is directed to patent-eligible subject matter pursuant to 35 U.S.C. § 101.

639. ~~519.~~ The '0,566 Patent is valid and enforceable, and presumed as such, pursuant to 35 U.S.C. § 282.

640. ~~520.~~ Comcast deploys one or more of the Accused MoCA Instrumentalities (e.g. XG1-A, XG1v3, XG1v4, XG2v2, and Arris DCX3200, Arris MR150CNM, Pace PR150BNM, Pace PX032ANI, Pace PXD01ANI, and/or Samsung



1 SR150BNM and similarly operating devices) in connection with operating and  
2 providing the Accused Services.

3 641. ~~521.~~ The Accused MoCA Instrumentalities deployed by Comcast to  
4 customer premises remain the property of Comcast while deployed.

5 642. ~~522.~~ The Accused MoCA Instrumentalities operate while deployed in a  
6 manner controlled and intended by Comcast.

7 643. ~~523.~~ As set forth in the infringement contentions that were served on  
8 Comcast on September 29, 2023 (attached ~~non-limiting claim chart~~ (hereto as Exhibit  
9 V),<sup>25</sup> any product or system operating in a MoCA network compliant with the charted  
10 provisions of MoCA 2.0 necessarily infringes at least claim 1 of the '0,566 Patent.

11 644. ~~524.~~ Each aspect of the functioning of the Accused MoCA  
12 Instrumentalities described in the claim chart operates while deployed to customer  
13 premises in a manner controlled and intended by Comcast.

14 645. ~~525.~~ Comcast provides no software, support or other facility to customers  
15 to modify any aspect of the functioning described in the claim chart of the Accused  
16 MoCA Instrumentalities while deployed to customer premises.

17 646. ~~526.~~ The Accused MoCA Instrumentalities are compliant with MoCA 2.0,  
18 as described in the '0,566 Patent claim chart, Exhibit V.

19 647. ~~527.~~ Comcast therefore directly infringes at least claim 1 of the '0,566  
20 Patent by using the Accused MoCA Instrumentalities to provide Accused Services to  
21 customers.

22 648. ~~528.~~ Comcast sells the Accused Services to its customers and subscribers  
23 for a fee. Pursuant to the sale of these services, Comcast uses the method recited in at  
24 least claim 1 of the '0,566 Patent to provide the Accused Services to Comcast's  
25 customers and subscribers through the Accused MoCA Instrumentalities. Comcast is  
26

27 <sup>25</sup> The prior claim chart for this patent can be found at DE 67.  
28



1 therefore engaging in the infringing use of at least claim 1 of the '0,566 Patent in order  
2 to generate revenue from its customers and subscribers.

3 649. ~~529.~~ Comcast directly infringes at least claim 1 of the '0,566 Patent when  
4 it, for example, uses the Accused MoCA Instrumentalities to test, demonstrate or  
5 otherwise provide Accused Services.

6 650. [REDACTED]  
7 [REDACTED]  
8 [REDACTED]  
9 [REDACTED]

10 651. Comcast has known of or has been willfully blind to the '802 Patent since  
11 before, and no later than the date of, its acceptance of service of the original Complaint  
12 in this action on February 16, 2023.

13 652. Comcast has known of or has been willfully blind to the '0,566 Patent  
14 since before, and no later than the date of, its acceptance of service of the First  
15 Amended Complaint in this action on June 5, 2023.

16 653. Comcast has known of or has been willfully blind to the '0,566 Patent  
17 since before, and no later than the date of, its acceptance of service of Entropic's  
18 infringement contentions on September 29, 2023.

19 654. ~~530.~~ Comcast has known of or has been willfully blind to the '0,566  
20 Patent since before, and no later than the date of, its receipt of the August 9, 2022  
21 communications from Entropic.

22 655. ~~531.~~ Comcast has been aware that it infringes the '0,566 Patent no later  
23 than its receipt of Entropic's communication sent to Comcast on August 9, 2022.

24 656. ~~532.~~ Comcast has known of or has been willfully blind to the '0,566  
25 Patent since at least the day before [REDACTED]

26 657. ~~533.~~ The '0,566 Patent issued while or before Comcast was a member of  
27 MoCA.  
28



1           658. ~~534.~~ Because of Comcast's knowledge of Entropic Inc.'s work and  
2 contributions related to MoCA technology, Comcast had knowledge of the '0,566  
3 Patent before August 9, 2022 or was willfully blind to its existence.

4           659. ~~535.~~ The claims of the '0,566 Patent are essential to practicing at least  
5 MoCA standards versions 1.1, and/or 2.0.

6           660. ~~536.~~ Comcast knew, or was willfully blind to the fact that the technology  
7 of the '0,566 Patent directly relates to networking over coaxial cable, including  
8 MoCA, at least as early as Comcast became aware of the existence of the '0,566  
9 Patent. Because of its familiarity with, and access to, the MoCA standards, Comcast  
10 knew, or was willfully blind to the fact, that use (by Comcast or its customers) of  
11 instrumentalities compliant with MoCA 1.1, and/or 2.0 to deliver Comcast services  
12 would necessarily infringe one or more claims of the '0,566 Patent.

13           661. ~~537.~~ Since learning of the '0,566 Patent and its infringing activities,  
14 Comcast has failed to cease its infringing activities.

15           662. ~~538.~~ Comcast's customers and subscribers directly infringe at least claim  
16 1 of the '0,566 Patent by using the Accused MoCA Instrumentalities in connection  
17 with the Accused Services provided by Comcast.

18           663. ~~539.~~ Comcast actively induces its customers' and subscribers' direct  
19 infringement by providing the Accused Services and associated support.

20           664. ~~540.~~ For example, Comcast actively induces infringement of at least claim  
21 1 of the '0,566 Patent by providing the Accused MoCA Instrumentalities to Comcast  
22 customers with specific instructions and/or assistance (including installation and  
23 maintenance) regarding the instantiation of a MoCA network and the use of the  
24 Accused MoCA Instrumentalities to infringe the '0,566 Patent.

25           665. ~~541.~~ Comcast aids, instructs, supports, and otherwise acts with the intent  
26 to cause an end user to make and/or use the MoCA network and/or use the Accused  
27



1 MoCA Instrumentalities to infringe every element of at least claim 1 of the '0,566  
2 Patent.

3 666. ~~542.~~ Additionally, Comcast contributes to the customers' and subscribers'  
4 direct infringement. Comcast provides at least the Accused MoCA Instrumentalities  
5 that create and are at least substantially all of a MoCA network to be used to infringe  
6 at least claim 1 of the '0,566 Patent.

7 667. ~~543.~~ The Accused MoCA Instrumentalities have no substantial  
8 noninfringing uses. When an end user uses the Accused MoCA Instrumentalities in  
9 connection with the Accused Services provided by Comcast, the end user directly  
10 infringes at least claim 1 of the '0,566 Patent. The Accused MoCA Instrumentalities  
11 are therefore especially made or especially adapted for use in an infringing manner.

12 668. ~~544.~~ Comcast's inducement of, and contribution to, the direct  
13 infringement of at least claim 1 of the '0,566 Patent has been, and is, continuous and  
14 ongoing through the acts described above in connection with Comcast's provision of  
15 the Accused Services.

16 669. ~~545.~~ Comcast's infringement of the '0,566 Patent is, has been, and  
17 continues to be willful, intentional, deliberate, and/or in conscious disregard for  
18 Entropic's rights under the patent.

19 670. ~~546.~~ Entropic has been damaged as a result of the infringing conduct  
20 alleged above. Comcast is liable to Entropic in an amount that compensates Entropic  
21 for Comcast's infringement, which by law cannot be less than a reasonable royalty,  
22 together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

23 671. ~~547.~~ Upon information and belief, there is no duty to mark any  
24 instrumentality with the '0,566 Patent in accordance with 35 U.S.C. § 287(a).  
25  
26  
27  
28



**COUNT XII**

**(Infringement of the '681 Patent)**

672. ~~548.~~ Entropic incorporates by reference each allegation of the paragraphs above as if fully set forth herein.

673. ~~549.~~ The '681 Patent duly issued on January 29, 2013 from an application filed October 15, 2009 and, *inter alia*, a provisional application filed October 16, 2008.

674. ~~550.~~ Entropic owns all substantial rights, interest, and title in and to the '681 Patent, including the sole and exclusive right to prosecute this action and enforce the '681 Patent against infringers, and to collect damages for all relevant times.

675. ~~551.~~ The '681 Patent is the Clock Sync Patent, and is generally directed to, *inter alia*, improving local clock time synchronization between a plurality of nodes in a communication network. '681 Patent, Abstract. The '681 Patent has 40 claims, of which claims 1, 11, 21, and 31 are independent. At least these claims of the '681 Patent are directed to a variety of techniques for clock synchronization for nodes in the MoCA network. A true and accurate copy of the '681 Patent is attached hereto as Exhibit W.

676. ~~552.~~ The '681 Patent is directed to patent-eligible subject matter pursuant to 35 U.S.C. § 101.

677. ~~553.~~ The '681 Patent is valid and enforceable, and presumed as such, pursuant to 35 U.S.C. § 282.

678. ~~554.~~ Comcast deploys one or more of the Accused MoCA Instrumentalities (e.g. XG1-A, XG1v3, XG1v4, XG2v2, and Arris DCX3200, Arris MR150CNM, Pace PR150BNM, Pace PX032ANI, Pace PXD01ANI, and/or Samsung SR150BNM and similarly operating devices) in connection with operating and providing the Accused Services.

679. ~~555.~~ The Accused MoCA Instrumentalities deployed by Comcast to customer premises remain the property of Comcast while deployed.



1           680. ~~556.~~ The Accused MoCA Instrumentalities operate while deployed in a  
2 manner controlled and intended by Comcast.

3           681. ~~557.~~ As set forth in the infringement contentions that were served on  
4 Comcast on September 29, 2023 (attached ~~non-limiting claim chart~~ (hereto as Exhibit  
5 X),<sup>26</sup> any product or system operating in a MoCA network compliant with the charted  
6 provisions of MoCA 2.0 necessarily infringes at least claim 1 of the '681 Patent.

7           682. ~~558.~~ Each aspect of the functioning of the Accused MoCA  
8 Instrumentalities described in the claim chart operates while deployed to customer  
9 premises in a manner controlled and intended by Comcast.

10           683. ~~559.~~ Comcast provides no software, support or other facility to customers  
11 to modify any aspect of the functioning described in the claim chart of the Accused  
12 MoCA Instrumentalities while deployed to customer premises.

13           684. ~~560.~~ The Accused MoCA Instrumentalities are compliant with MoCA 2.0  
14 described in the '681 Patent claim chart, Exhibit X.

15           685. ~~561.~~ Comcast therefore directly infringes at least claim 1 of the '681  
16 Patent by using the Accused MoCA Instrumentalities to provide Accused Services to  
17 customers.

18           686. ~~562.~~ Comcast sells the Accused Services to its customers and subscribers  
19 for a fee. Pursuant to the sale of these services, Comcast uses the method recited in at  
20 least claim 1 of the '681 Patent to provide the Accused Services to Comcast's  
21 customers and subscribers through the Accused MoCA Instrumentalities. Comcast is  
22 therefore engaging in the infringing use of at least claim 1 of the '681 Patent in order  
23 to generate revenue from its customers and subscribers.  
24

25  
26  
27 <sup>26</sup> The prior claim chart for this patent can be found at DE 67.  
28



1           687. ~~563.~~ Comcast directly infringes at least claim 1 of the '681 Patent when it,  
2 for example, uses the Accused MoCA Instrumentalities to test, demonstrate or  
3 otherwise provide Accused Services.

4           688. [REDACTED]  
5 [REDACTED]  
6 [REDACTED]  
7 [REDACTED]

8           689. Comcast has known of or has been willfully blind to the '802 Patent since  
9 before, and no later than the date of, its acceptance of service of the original Complaint  
10 in this action on February 16, 2023.

11           690. Comcast has known of or has been willfully blind to the '681 Patent since  
12 before, and no later than the date of, its acceptance of service of the First Amended  
13 Complaint in this action on June 5, 2023.

14           691. Comcast has known of or has been willfully blind to the '681 Patent since  
15 before, and no later than the date of, its acceptance of service of Entropic's  
16 infringement contentions on September 29, 2023.

17           692. ~~564.~~ Comcast has known of or has been willfully blind to the '681 Patent  
18 since before, and no later than the date of, its receipt of the August 9, 2022  
19 communications from Entropic.

20           693. ~~565.~~ Comcast has been aware that it infringes the '681 Patent no later than  
21 its receipt of Entropic's communication sent to Comcast on August 9, 2022.

22           694. ~~566.~~ Comcast has known of or has been willfully blind to the '681 Patent  
23 since at least the day before [REDACTED]

24           695. ~~567.~~ The '681 Patent issued while or before Comcast was a member of  
25 MoCA.  
26  
27  
28



1           696. ~~568.~~ Because of Comcast's knowledge of Entropic Inc.'s work and  
2 contributions related to MoCA technology, Comcast had knowledge of the '681 Patent  
3 before August 9, 2022 or was willfully blind to its existence.

4           697. ~~569.~~ The claims of the '681 Patent are essential to practicing at least  
5 MoCA standards versions 1.1, and/or 2.0.

6           698. ~~570.~~ Comcast knew, or was willfully blind to the fact that the technology  
7 of the '681 Patent directly relates to networking over coaxial cable, including MoCA,  
8 at least as early as Comcast became aware of the existence of the '681 Patent. Because  
9 of its familiarity with, and access to, the MoCA standards, Comcast knew, or was  
10 willfully blind to the fact, that use (by Comcast or its customers) of instrumentalities  
11 compliant with MoCA 1.1, and/or 2.0 to deliver Comcast services would necessarily  
12 infringe one or more claims of the '681 Patent.

13           699. ~~571.~~ Since learning of the '681 Patent and its infringing activities,  
14 Comcast has failed to cease its infringing activities.

15           700. ~~572.~~ Comcast's customers and subscribers directly infringe at least claim  
16 1 of the '681 Patent by using the Accused MoCA Instrumentalities in connection with  
17 the Accused Services provided by Comcast.

18           701. ~~573.~~ Comcast actively induces its customers' and subscribers' direct  
19 infringement by providing the Accused Services and associated support.

20           702. ~~574.~~ For example, Comcast actively induces infringement of at least claim  
21 1 of the '681 Patent by providing the Accused MoCA Instrumentalities to Comcast  
22 customers with specific instructions and/or assistance (including installation and  
23 maintenance) regarding the instantiation of a MoCA network and the use of the  
24 Accused MoCA Instrumentalities to infringe the '681 Patent.

25           703. ~~575.~~ Comcast aids, instructs, supports, and otherwise acts with the intent  
26 to cause an end user to make and/or use the MoCA network and/or use the Accused  
27



1 MoCA Instrumentalities to infringe every element of at least claim 1 of the '681  
2 Patent.

3 704. ~~576.~~ Additionally, Comcast contributes to the customers' and subscribers'  
4 direct infringement. Comcast provides at least the Accused MoCA Instrumentalities  
5 that create and are at least substantially all of a MoCA network to be used to infringe  
6 at least claim 1 of the '681 Patent.

7 705. ~~577.~~ The Accused MoCA Instrumentalities have no substantial  
8 noninfringing uses. When an end user uses the Accused MoCA Instrumentalities in  
9 connection with the Accused Services provided by Comcast, the end user directly  
10 infringes at least claim 1 of the '681 Patent. The Accused MoCA Instrumentalities are  
11 therefore especially made or especially adapted for use in an infringing manner.

12 706. ~~578.~~ Comcast's inducement of, and contribution to, the direct  
13 infringement of at least claim 1 of the '681 Patent has been, and is, continuous and  
14 ongoing through the acts described above in connection with Comcast's provision of  
15 the Accused Services.

16 707. ~~579.~~ Comcast's infringement of the '681 Patent is, has been, and  
17 continues to be willful, intentional, deliberate, and/or in conscious disregard for  
18 Entropic's rights under the patent.

19 708. ~~580.~~ Entropic has been damaged as a result of the infringing conduct  
20 alleged above. Comcast is liable to Entropic in an amount that compensates Entropic  
21 for Comcast's infringement, which by law cannot be less than a reasonable royalty,  
22 together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

23 709. ~~581.~~ Upon information and belief, there is no duty to mark any  
24 instrumentality with the '681 Patent in accordance with 35 U.S.C. § 287(a).

25 **PRAYER FOR RELIEF**

26 WHEREFORE, Entropic requests that:  
27  
28



1 A. The Court find that Comcast has directly infringed the Patents-in-Suit and  
2 hold Comcast liable for such infringement;

3 B. The Court award damages pursuant to 35 U.S.C. § 284 adequate to  
4 compensate Entropic for Comcast's past and future infringement of the Patents-in-Suit,  
5 including both pre- and post-judgment interest and costs as fixed by the Court;

6 C. The Court increase any award to Entropic by a judicially appropriate  
7 amount;

8 D. The Court find that Comcast willfully infringed the Patents-in-Suit, and  
9 increase the damages to be awarded to Entropic by three times the amount found by  
10 the jury or assessed by the Court;

11 E. The Court declare that this is an exceptional case entitling Entropic to its  
12 reasonable attorneys' fees under 35 U.S.C. § 285; and

13 F. The Court award such other relief as the Court may deem just and proper.  
14

15 **JURY TRIAL DEMANDED**

16 Pursuant to Rule 38(b) of the Federal Rules of Civil Procedure, Entropic hereby  
17 requests a trial by jury on all issues raised by this Complaint.

18 Dated: December 8, 2023

Respectfully submitted,

19 By: /s/ Christina Goodrich

20 Christina Goodrich (SBN 261722)

christina.goodrich@klgates.com

21 ~~Connor J. Meggs~~ Cassidy T. Young (SBN  
22 ~~336159~~ 342891)

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**CERTIFICATE OF SERVICE**

**Case No. 2:23-cv-01048-JWH-KES**

I am employed in the county of Los Angeles, State of California. I am over the age of 18 and not a party to the within action; my business address is: K&L GATES LLP, 10100 Santa Monica Boulevard Eighth Floor, Los Angeles, CA 90067.

On December 8, 2023, I served the document(s) described as:

- **SECOND AMENDED COMPLAINT FOR PATENT INFRINGEMENT FOR CASE NO. 2:23-cv-01048-JWH-KES**
- **UNREDACTED REDLINE COMPARE FIRST AMENDED COMPLAINT TO SECOND AMENDED COMPLAINT**
- **UNREDACTED EXHIBIT B TO SECOND AMENDED COMPLAINT**
- **UNREDACTED EXHIBIT D TO SECOND AMENDED COMPLAINT**
- **UNREDACTED EXHIBIT F TO SECOND AMENDED COMPLAINT**
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- **UNREDACTED EXHIBIT T TO SECOND AMENDED COMPLAINT**
- **UNREDACTED EXHIBIT V TO SECOND AMENDED COMPLAINT**
- **UNREDACTED EXHIBIT X TO SECOND AMENDED COMPLAINT**

on the interested parties in this action by delivering a true copy thereof enclosed in sealed envelope(s) addressed as follows:

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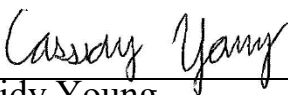
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☒ **BY ELECTRONIC SERVICE:** by transmitting a true copy of the foregoing document(s) to the e-mail addresses set forth as stated on the attached mailing list.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Executed on December 8, 2023, at Los Angeles, California.

  
\_\_\_\_\_  
Cassidy Young